The Journal of the American Medical Association

VOL. XXV. CHICAGO, SEPTEMBER 14, 1895. No. 11.

ADDRESS.

DANIEL DRAKE: OR THEN AND NOW.

The Address in Medicine delivered before the Mississippi Valley Medical Association, Detroit, Mich., Sept. 4, 1895.

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Mr. President and Gentlemen, Members of the Mississippi Valley Medical Association:—As I left Jersey City and traveled in twenty-four hours to this beautiful city, the place of your meeting this year, it was impossible that my thoughts should not have turned to the strangely different journey, taken in his infancy over this same route, more than one hundred years ago, by one who was destined to play so prominent and so honorable a part in the life of the Mississippi Valley during the ensuing sixty-five years.

Dr. Daniel Drake, to whose life work I beg to invite your attention this evening, was born in New Jersey, of humble parentage, on Oct. 20, 1785; and in the latter part of the spring of 1788 his parents removed to Kentucky. Taking Daniel and his baby sister Elizabeth, and an unmarried sister of Mrs. Drake, with all their worldly goods, in one Jersey wagon, the journey was made over the Alleghenies to Fort Pitt; and then in a boat crowded with other families, and accompanied by similar boats for fear of Indians, to Maysville. More than sixty years afterward, Dr. Drake gave (in a series of reminiscent letters addressed to his children) an account of the toils and hardships and dangers endured by that pioneer family for the ensuing twelve years, until as a lad of 15 years of age, he was sent himself to study medicine under Dr. Goforth at Cincinnati. I can point to no work in which a more vivid and life-like picture is given of a primitive condition of society, and in which, at the same time, the author reveals with such frankness and fullness his own character and individuality. It is not surprising that all who knew Dr. Drake, at every stage of his life, should have concurred in unanimous testimony to the lofty and at the same time attractive qualities of his nature. It is a long time since I first began to study his works, and I think I may safely say I have read all that he ever wrote for publication, and nearly all of the many publications concerning him which appeared after his death. Whence it is that some gifted persons acquire their rare charm of literary style, it were idle to inquire. To Drake, it was the gift of nature, the power of expressing in pure and flowing and brilliant language the lofty ideals, the clear thoughts, the graceful fancies of his ardent nature and his powerful mind. His childhood was spent in the ceaseless labor of the farm; but through it all, Nature spoke to him as to a favorite son and opened his eyes to her infinite charms and inspired him with a love for herself which never lost its ardor. It was this which sustained him through a long life, into which were crowded far more than an usual number of severe trials and disappointments, and kept his spirit to the end as fresh and buoyant and enthusiastic as a boy's. There came readily with this true love of nature those precious things of life—the power to appreciate purity and nobility in humanity; the power to form and to sustain lofty ideals; and the power to scorn petty groveling ways and to pursue the chosen higher path. This was eminently true of Drake. His character is known to us with a rare fullness, and yet there does not appear in it a single vice. He was ambitious; but his aims were never selfish or personal. His proper self-respect was untainted with vanity. His desire for office was to secure larger opportunities for public service. Money had no attraction for him, save to promote scientific investigation and to discharge his obligations. He was familiar with the pinching grip of poverty; he longed for the larger opportunities of study and action which wealth would give; at one time he entered almost recklessly into commercial operations which involved him in financial disaster; he accepted the load of debt with cheerful courage, and eventually paid every creditor in full. And yet he never allowed himself to pursue his profession as a mere money-making calling, but resolutely devoted a large part of his talents, time and strength to the advancement of education and science.

It may seem to you that it were more fitting, had an address upon the character and work of Daniel Drake been delivered in Cincinnati, with whose institutions his memory is most intimately associated. But when we consider that this is distinctly a gathering of the medical men of the Mississippi Valley, and when we reflect upon the colossal work which Drake achieved for the entire valley, and upon the splendid conception which he formed in the early days as to its future development and destiny, there can be no doubt that wherever this Association may meet, there should the memory of Drake be cherished.

The census of 1790, two years after his family came to Kentucky, gave the population of the United States as 3,929,214. Of the many States which now must be included in the great Central Valley, only Kentucky and Tennessee are there mentioned, with an aggregate population of 109,368, or 2.7 per cent. of the whole, and the center of population was twenty-three miles east of Baltimore; in 1800, the year in which he began to study medicine at the age of 15 in the town of Cincinnati, which did not then contain more than 500 inhabitants, the census gives the total population of the country as 5,308,483, and that of the Central Valley (comprising Tennessee, Ohio, Indiana and Mississippi) as 386,413, or 7.2 per cent. of the whole, and the center of population was eighteen miles west of Baltimore; while in 1895 the estimated population[1] of the coun-

try is 69,212,057, and the population of the great Central Valley, including eighteen States, is 29,614,304, or about 43 per cent., and the center of population is about Columbus, Ind., a westward movement of 525 miles in one hundred years. From an early age the tremendous magnitude of the physical and sociological features of the interior valley of North America, including the Canadian portion, impressed the imagination of Drake with overwhelming force. This vast stretch of territory beginning within the tropics and terminating within the Polar circle, and bounded laterally by the Appalachian Mountains on the East and on the West by the Rocky Mountains, embraces over 5,000,000 of miles—the northern part alone being rendered unavailable by the state of its surface and climate. Even that part belonging to the United States and which may be strictly called the Mississippi Valley amounts to 1,244,000 miles. To the clear vision of Drake, this valley presented itself as the last crucible into which living materials in great and diversified streams could be poured for amalgamation. The commingling of races upon a scale such as the world has never elsewhere witnessed could not fail in the end to give a new physiologic and psychologic development. No man could have less than Drake of the exuberant national spirit which made Elijah Pogram so great a terror to the effete civilizations of Europe. When Drake expressed his conviction that the vast homogeneous population which would eventually fill the interior valley of North America would present the last and greatest development of society, the opinion was based, not on the surpassing natural advantages of the territory, but upon his faith in the physical and social perfectibility of the race when it should attain its growth under conditions of civil and religious liberty. The contemplation of this great vision filled him with a passionate desire as a philanthropist and social reformer, that at the earliest day the foundations of education and of charity should be laid deep and strong there, so that the mighty tide of promiscuous immigration which was rising rapidly should have a saving element infused at once. Again he foresaw, as a natural philosopher, the immense importance of securing in the early days of the settlement of the valley, an accurate account of its topography, and of the climate, the flora and the fauna; and parallel with this, an account of the physical condition and habits of life of the pioneers. Lastly, as a medical philosopher, he recognized early the absolute necessity of a wide-spread enforcement of public and private hygiene; and of radical measures for the elevation of medical education.

When we consider the achievements of Drake in each of these three difficult fields of labor, we marvel at the courage, the ability and the unsparing ceaseless activity displayed.

Throughout his life he was intensely interested in public affairs. Intimately associated with many of the most eminent men of the country, he threw himself with ardor into the great political questions of the day, and in his speeches and writings evinced a pure and lofty patriotism. His repeated journeys up and down the Mississippi Valley had resulted in an equal love and respect for the North and the South. Later, in 1851, this expressed itself in a series of remarkable letters to Dr. John C. Warren of Boston, on the slavery question, in which he insisted that a marked amelioration in the condition of the slaves had occurred under his own observation, and advocated the restriction of slavery to the States then holding slaves, and that emancipation should be coupled with colonization in Africa.

When only 30 years of age, he published a notable work, entitled, "A Picture of Cincinnati," which attracted wide-spread attention both in America and abroad; and in this he began to urge extensive internal improvements, and then made the first public suggestion of almost all the canals which have since been constructed in this region. In 1833 he advocated warmly, and acted as chairman of a special commission of three, to promote the construction of a railway which should connect the Ohio River at Cincinnati with the Atlantic at Charleston. It was not on commercial grounds he urged it, but because he believed it would tend to efface sectional hostility if the North and South should thus pledge themselves to common national interests. He was largely instrumental in founding the Free Library in Cincinnati. He organized the Cincinnati College, which according to his design was to embrace the features of a fully developed university, while its medical school and hospital in an especial sense owe their existence to him. The Museum of Science and Art was another of his creations. He labored hard for these institutions; he secured legislative grants in their favor; he personally solicited funds for their endowment and support. It is probably unnecessary to state that he was treated with injustice and ingratitude, for such is the almost inevitable reward of true benefactors. Such treatment never discouraged him. His ambition was for the cause and not for himself; and he never lost, until the very end, his enthusiasm for humanity and his zeal in the service of the community. Truly did the great and wise Gross speak of him as equally eminent as a patriot, a philanthropist and a medical author. The eloquent Charles D. Meigs, in delivering the biographical address on Drake at the College of Physicians of Philadelphia, spoke of him as "a man of great and merited reputation, which extended even to the outer boundaries of the republic of medical letters, while as a citizen he reflected honor on his country, so that his name is destined to be reverently pronounced wherever the medical biography and history of America shall hereafter become known."

But I must hasten to speak of the colossal work to which Drake devoted the greater part of his life. I have told you that from his earliest years the future importance of the great Central Valley of North America impressed itself indelibly upon him. He became a geologist and an archæologist in his study of the formations through which the Mississippi forced its way to the Gulf. His early familiarity with the forest and the fields led naturally to a profound study of botany, in which branch of science he became a high authority. He mastered the science of meteorology and enriched it by numerous accurate and original observations. He collected the materials upon which his descriptions and conclusions are based, by personal exploration of the entire valley from the Gulf to Lake Superior and from the Alleghenies to the Rockies, in the course of which he traveled over 30,000 miles. He visited hundreds of medical men along the valley, and actually instituted the earliest collective investigation with which I am acquainted,

[1] According to an estimate made for the World Almanac of 1895, by the Governors of the States and Territories.

y issuing series of circulars to all the physicians of hat region, soliciting their coöperation in securing he data desired. It was over thirty years after the irst announcement of the work that the first volume as published; the second volume did not appear ntil nearly two years after the death of the author n 1852.[2] Drake dedicated his work to the physicians f the Interior Valley of North America, and, with abitual modesty, styled it "An imperfect attempt to ay an extended foundation for a history of its dis-ases." A careful and critical perusal of the 1,700 ages of this monumental work will convince you hat Drake was true to the principle announced in the reface, "that he who would observe correctly must ave no theories either to maintain or destroy." As tated by him, the theory that the geological, hydro-raphical, topographical, climatic, social and physio-ogic conditions of communities must affect their edical histories; and that where different commu-ities differ widely in one or several of these condi-ions, a corresponding diversity must appear in the espective histories of all the diseases which admit f modification from causes referable to those heads will not be disputed. It may readily be pushed to extremes; but the task which Drake assumed was to portray these conditions as they existed in the early part of the nineteenth century in this great valley, and then to furnish an accurate account of the dis-eases therein prevalent. Faithful to this duty, he ascended the streams to their mountain sources, or descended them to the sea at points exceedingly dis-tant from each other. His masterly statement of the contrast between the medical relations of the Missis-sippi, the river of latitudes, and the St. Lawrence, the river of longitudes, may be referred to as an excellent example of his method.

The accumulation of facts is simply prodigious; the style is clear and admirably adapted; while the obvious sincerity of purpose and the philosophical breadth of view impress you with a sense of the per-manent value of the work.[3] It is easy in the light of our more accurate diagnosis and pathology to point to serious mistakes. The most important of these is the failure to admit the distinct individuality of typhoid fever, which had then recently been demon-strated by Gerhard and Pennock. Nevertheless the existence of severe outbreaks of typhoid at many points of the valley, and in different years, is clearly established by the excellent account furnished of the symptoms and course of the disease, and of the lesions found in fatal cases. These accounts should be re-ferred to with care by those who are now meeting with typhoid fever in the same localities, but under widely different local conditions. How far there may be actual variations in the disease as found in the Interior Valley, in the Atlantic States, and in Europe, is still open to discussion; and Drake's chapters are an important contribution to the study. The flora and fauna certainly present wide differences at differ-ent sections of the valley. It seems improbable that microörganisms should be exempt from the influence of climate and environment. It will not seem strange if shown that certain species of bacillus acquire at different latitudes, and in different soils, widely dif-ferent degrees of growth and pathogenic virulence. There is considerable evidence in favor of the view that the bacillus communis coli, for instance, may from contact with certain organic matter, fecal or not, acquire the properties of the so-called bacillus of Eberth. Bacteriology is not ready as yet to dogma-tize on such points. It is probable that we must take into account not only the susceptibility of the sys-tem (the soil) and the number of bacilli implanted (the dose of infection) but the virulence of the par-ticular specimens of the bacillus present.

If I were to draw any inferences from Drake's description as to the relation between the typhoid he saw and that which we meet with to-day in the Mid-dle Atlantic States, I should say that there were many more cases without eruption, while on the other hand grave nervous symptoms, hyperpyrexia, malarial complications and primary pneumonic lesions were unusually frequent.

Drake had arrived at a belief in the microbic nature of malaria, yellow fever and typhoid fever, as early as 1832, though of course his opinion was based purely on theoretical grounds. He states specifically that he had not seen the ingenious work of the elder John K. Mitchell until the year 1850; and hastens to make acknowledgment of the almost irresistible array of facts adduced by the latter distinguished author. He anticipated Woodward in the attempt to establish the existence of a *tertium quid* formed by the blending of typhoid and malarial infection. It seems to be an easy thing to fall into this mistake when one is dealing with typhoid and malarial fevers simultaneously on a large scale. The occur-rence of a malarial complication of typhoid, and of a typhoid state in malarial fevers, is familiar; and it may be possible that the co-existence of the two microbes may so modify the blood and tissues as to influence the toxin and antitoxin developed and the consequent phenomena of the disease, but the ac-counts furnished by Drake, just as the later and more elaborate descriptions by Woodward, fail to convince that such modifications go far enough to constitute a specific difference which would justify the creation of another species of fever. Malaria, in-deed, was the bane of the Interior Valley in those days; and I doubt if any one has enjoyed such op-portunities as did Drake for studying all of its man-ifestations. Almost every page of his great work attests its prevalence; from the Gulf of Mexico up to the 47th degree of latitude (beyond which it became very rare); on the low and ill-drained lands near the rivers, and though in less virulent form through-out the bluff zone and back into the hilly regions; and over the Lake region, including extensive por-tions of New York State.[4] Even at the elevation of 600 or 1,000 feet, malarial fevers were of frequent oc-currence; and when extensive disturbance of the sur-

[2] I may call attention to the fact that the first 186 pages of the second volume are a reprint of the last 164 of the first volume. This was in all probability intentional on the part of the able editors, since it enabled the second volume to open at the beginning of the discussion of Febrile Diseases.

[3] In regard to Drake's great work, the Standing Committee on Medical Literature of the AMERICAN MEDICAL ASSOCIATION reported at its third annual meeting, held in Cincinnati in May, 1850, concerning the first volume as follows:

"This volume, which contains nearly nine hundred pages, is taken up with the medical topography, the climate, the manners of the inhabitants, and the autumnal fevers of this vast region. Owing to the late period of its publication, the committee have been unable to examine the treatise thoroughly, and they might, therefore, rest contented with a bare announcement of its existence. But they are reluctant to do so, since even a superficial inspection of the work has convinced them that it belongs to the very highest rank of our medical literature, and may very probably come to be regarded as the most valuable original work yet published in America. It is certainly unrivaled in the amount and variety of its materials; its style is perspicuous, correct and elevated; and it appears to have been elaborated with great industry and care. Its distinguished author has raised a durable monument to his own name and to the medical reputation, not only of the great valley but of the greater Union."

[4] The swamps of the Chautauqua (sic) Summit in New York at an elevation of 1,400 feet were innoxious.

face of the soil was made, virulent outbreaks were to be feared. The distinguished French traveler, Volney, wrote that in a journey of 250 miles from Cincinnati to Detroit, begun on Sept. 8, 1796, in a company of twenty-five persons, they did not encamp one night without one at least of the party being seized with a periodical fever. On arriving in Detroit only three of the party were in health, and on the ensuing day the Commander, Major Swan and himself, were seized with a malignant fever.

On the lower reaches of the valley there were places where malaria was so pernicious and the sanitary conditions so shocking that we can not criticise Dickens for the harrowing account he published in "Martin Chuzzlewit" in 1843. Drake describes a town which was projected under the name of Florida, but which may well have been the original of that most misnamed Eden to which young Martin and the faithful Mark Tapley were lured by the wiles of land agents. It was at the estuary of the Escambia River, where the silt brought down by that stream had generated a marsh several miles in width, while the pine lands, which usually conferred immunity, lay to the leeward. In 1766, sixteen French Protestant families, consisting of sixty persons, were sent at the expense of the English government to this deadly spot. When the hot months arrived, all but fourteen perished; and the survivors lingered only a few months longer with shattered constitutions. In spite of this, many years later, in 1832, a new town was laid off to be called Florida; and between twenty and thirty wooden houses were built and tenanted by as many families. Their history, says Drake, may be told in a few words. Year after year they were assailed by autumnal fevers of the most malignant character; the spot was at last called a graveyard; and being abandoned by those who survived, I found, on passing through in 1843, but two families remaining.

"Do you consider this a swamp, Sir?" inquired Chollop gravely of Mark Tapley at Eden.

"Why yes, Sir," returned Mark, "I haven't a doubt about it."

"The sentiment is quite European," said the Major, "and does not surprise me. What would your English millions say to such a swamp in England, Sir?"

"They would say it was an uncommon nasty one, I should think," said Mark, "and that they would rather be inoculated for fever in some other way."

"European," remarked Chollop, with sardonic pity. "Quite European."

It was just such swamps as that of Eden which abounded formerly in many of the counties of England, and the medical literature of England in the last century teemed with discussions of the resulting malaria. Just as drainage and cultivation have almost eradicated it there, so did Drake and every intelligent observer know that the same agencies would inevitably banish malaria in large degree from our great Interior Valley. How swiftly this good work would progress under the vast immigration of the ensuing fifty years, not even Drake in his most sanguine moments would have ventured to predict. Meanwhile, it was the great cause of mortality or infirmity of constitution, especially in the southern portions of the valley; and the medical practice of the entire region was powerfully influenced by the views entertained regarding its nature.

I am aware that some of Drake's contemporaries possibly influenced by envy of his national fame and great authority, insinuated that he was a mere theorist and speculator, and a reckless practitioner. Dr. Gross, who had the best opportunities of knowing him and his practical ability, gave this testimony: "I have great confidence in his professional acumen. I saw enough of him in the sick chamber to satisfy me he had a most minute and thorough knowledge of disease and of the application of remedial agents. There was no one whom I would rather have trusted in my own cases, or in that of a member of my family." No additional testimony, however, is needed by any one who will carefully study his own writing. Everywhere is manifest the accurate observer, the clear-headed thinker, the practical man who can not be led by mere authority and who will not lapse into routine. The truth is that Drake was ahead of his time—at least of that time in his region—as much in his practice as he was in other things. When he first began the study of medicine with Dr. Goforth, of Cincinnati, at the age of 15 years, he showed so much ability that in four years he was admitted to partnership. He was thus engaged in practice, not only without a diploma but without ever having listened to a single lecture, for over a year, when he scraped together enough money to go to Philadelphia and take a course of lectures at the University of Pennsylvania. Before leaving Cincinnati, his instructor and partner presented him with an autograph diploma, setting forth Drake's ample attainments in all the branches of the profession. This was the sole pretense of a license to practice which he possessed until his second visit to Philadelphia, eleven years later, in 1816, when he received his diploma at a special Commencement held purposely for him on May 11, more than a month after the occurrence of the regular Commencement.[5] He was powerfully impressed with the brilliancy of Rush's lectures. He had, even as a lad, conceived a high admiration for the genius of this great teacher from the study of his writings; but his practical sagacity led him to modify his doctrines in accordance with the results of his own observations, instead of carrying them blindly to an extreme length as was done by only too many. We can well understand the mortality that attended all fevers, when we read in Drake's reports of the practice of his contemporaries, that for the gastric complications many physicians gave calomel in doses of a scruple or a drachm at short intervals; that even doses of half an ounce, or an ounce and a half several times a day were far from rare; that these doses were sometimes given to load down the irritable stomach and by their actual weight to prevent vomiting; that multitudes believed that when they did not obtain bilious discharges by ounce doses, it was because they were too timid in its administration; that in some cases even so much as a pound or a pound and a half were administered to a single patient. He quotes from the letter

[5] A full explanation of this singular and highly complimentary occurrence is given in Dr. Meigs' interesting biographical notice of Drake (Trans. Coll. Phys. of Phila., 1893) in the form of a letter from Dr. Joseph Carson, the Dean of the Medical Faculty of the University. It appears that Dr. Drake submitted his thesis, at the close of the session, and left the city with the understanding that he should be notified in time to be examined and to receive his degree. The letter did not reach him and he returned to Philadelphia the day after Commencement. "Under these circumstances the Professors, considering the high literary accomplishments of Mr. Drake, the value of his late publication, his present eminence and future promise . . . examined him on April 30 and recommended him to the Board of Trustees for the special mandamus which was granted at the Commencement held as has been stated."

of a physician in Louisiana who wrote with playful hyperbole that in a recent epidemic, "he had drawn enough blood to float, and had given enough calomel to freight, the steamer *General Jackson*." Against this drastic and murderous practice, Drake exerted all his influence. He urged the external use of cool water in fevers to reduce excessive temperature; he rapidly came to advocate an expectant method of treatment conjoined with scrupulous attention to all hygienic details, because he found all special methods unsatisfactory. When we look around us to-day and witness the eminent schools of medical science in those Central States; the numerous distinguished practitioners, teachers and authors; the original publications of high scientific and practical value, we are amazed at the speed with which the medical profession here has advanced to a position of well organized and commanding strength. It is easy for you to-day to advocate prolongation and elevation of medical studies; to insist upon the adoption of rational methods of treatment; to secure substantial aid in the prosecution of scientific investigation. Let us never despise the day of little things. All the more should we honor those who were the pioneers in this wonderful march of progress; and who held aloft the standard of scientific truth and professional dignity under the most difficult conditions. Well do I remember the feeling words in which my revered friend, the late Samuel Freeman Miller (whose services in the cause of constitutional liberty rendered during so many critical years as Associate Justice of the United States Supreme Court place him in the rank with the immortal Marshal), spoke to me of the causes which led him to abandon medical practice and begin the study of law. He graduated at the Medical Department of Transylvania University, in 1838; but soon found the difference between the theory as taught and the practice as established in Kentucky so glaring, and the difficulty of securing a chance for more rational measures so insuperable that he was wretchedly unhappy. Drake felt these difficulties keenly, but his enthusiasm carried him through. When he was only 21 years of age he used cold affusions in a case of fever; the friends protested, and Drake called in consultation an old and respectable physician who highly approved the affusions, but said it was too hazardous to a physician's reputation and therefore should not be employed. "This advice," continued Drake, "contained something which we are all sufficiently predisposed to lay hold of. I accordingly adopted it, and have had repeated occasions for dissatisfaction ever since. The event of some severe cases of fever in the summer of 1812 determined me to revert to the disinterested and magnanimous views and motives of youth, and also to prescribe and enforce, in all dangerous cases, anything which I believed necessary, the antipathies of the sick and the obloquy of the intermeddling notwithstanding." I am sure that every one of us has been forced to face the same temptation; and it is well for us if we have shown the righteous determination of Drake. It is certainly not the least of Brandt's claims to our gratitude that while others before him had recognized the advantages of hydrotherapy in fevers, he alone insisted upon it so strenuously and repeatedly and with such impressive marshalling of facts, that at last a reluctant world was compelled to give heed.

I may not now enter into any extended discussion of this ever interesting question. My object has been to show that Drake was a leader in this respect also. He appreciated the external use of cold water in fevers, in the phlegmasiæ, and as a means of rousing reaction in collapse. He quotes from the practice of a number of his correspondents to show that hydrotherapy made some headway in his time. The difficulties attending its thorough introduction into private practice have always been too great, however, for the average man to overcome; and all of us know that only of recent years and under the teaching of Brandt, of Jurgensen, of Liebermeister has it secured general adoption. In fact, even at the present day, this curious anomaly exists, that in nearly all hospitals thorough hydrotherapy is used in fevers, and in many of them the rigid Brandt method is applied as an unvarying, and therefore unphilosophical routine; while in private practice I fear there are comparatively few medical men who insist upon cool bathing, even when it is urgently indicated. If any rigid routine treatment of typhoid fever is to be used, the statistics leave no room for doubt that the Brandt method has yielded a larger percentage of recoveries than any other. The problem is still unsolved, however, whether the restriction of this method to certain groups of cases, and the employment of other methods in cases of different type, may not still further reduce the mortality. To this conclusion I believe we shall come at last. It is the opinion which some of the ablest clinicians are reaching. When we meet with such figures as the following, which give the results of the strict Brandt method in typhoid fever in the German Hospital of Philadelphia for five years, and show during 1890-91-92, 292 cases with 16 deaths, or a mortality of 5.5 per cent., while during 1893-94 there were 152 cases with 24 deaths, or over 15 per cent. mortality, it is difficult to avoid the conclusion that some of those who died might have fared better under another mode of treatment. We may be assured that hydrotherapy, like every other powerful remedy at our disposal, must be used with strict regard to the peculiarities of each case; and that extended observation will show it can not be employed in a rigid routine method in any disease, and especially in so complex a disease as typhoid fever, with the attainment of the best results practicable. I am convinced, for instance, that it is a grievous mistake to omit the use, in conjunction with hydrotherapy, of some suitable remedy adapted to the state of the affected mucous membrane, and to the septic condition of the intestinal canal. I doubt not that others have learned to use various remedies for this purpose with good results; as for myself, I must state that for so many years I have used nitrate of silver in every case of typhoid fever under my care, and with such apparent benefit, that I greatly prefer it to all other intestinal antiseptics; and, indeed, as you well know, it possesses extremely high antiseptic power, in addition to its remarkable local action on the mucous membrane.

I wish I might dwell at length on the admirable instruction of Drake as to the hygienic treatment of fevers; but this was but natural in one who saw more clearly than any one of his time, so far as I know, the supreme importance of hygiene both in preventive and remedial medicine.

Each age has its Jeremiahs, who lament the degeneracy of the time. It is probable that Nordau, who is the latest, is also the most learned and ingenious of these apostles of pessimism. But it is easy to

make out a strong case by collecting data which support a certain view and excluding all which are opposed. His book, which has had the vogue of a popular novel, will be scarcely more long-lived or influential. It is a poor business to oppose mere assertion to elaborate argument, as I am doing; but I have such deep and unchanging faith in the improvement, physical, intellectual and moral, of the race, that I can not let pass unchallenged what seem to me the specious and unsubstantial arguments of the pessimists. Thirty years ago many people were comfortably settled in their conviction that the attempt to establish on this continent an enduring, vigorous, native-born race was doomed to failure. The American climate was to prove too much for us; and those who survived the climate were to succumb to the enervating effects of luxury, or to fall in the deadly struggle for the almighty dollar. We can afford to laugh at these predictions now, when we see the splendid physique of the men and women of the rising generations; when we see the triumphant advance of our industrial and commercial position; when we see the development of a vigorous literary, scientific and artistic activity; when we see a progress in the wise and enlightened use of wealth which extorts the admiration of the world; and when we see our beloved institutions standing the stress of every storm and adapting themselves more and more marvelously to the growth of a community of 70,000,000 peaceful and prosperous freemen.

But in Drake's day the peculiarities of the climate were little heeded; the dress, especially of women and children, was usually unsuitable; athletic exercises were almost unknown; the excessive use of spirits and of tobacco was conspicuously frequent. Many of the early settlers brought with them the habits of life acquired in comparatively equable climates; it is needless to say they suffered from the sudden and violent changes here. Drake called attention to the obvious fact that the great Central Valley, lying between one of the hottest and one of the coldest seas of the globe, must forever be subject to sudden vicissitudes and wide extremes of temperature. He cited as examples of such extremes a yearly range of 117 at Cincinnati; of 126 at Montreal; of 134 at St. Louis. We have learned not only that these changes can be anticipated, but that with intelligent care their effects can be readily tolerated.

The most depressing feature of those early days is the fact that so little physical exercise was taken by young people of either sex. Says Drake: "A walk of a single mile is regarded as an enterprise to be remembered with self-complacency; and if, under necessity, extended to twice that distance, a hardship to be recounted for the purpose of exciting sympathy." If hard labor and exposure generate a few diseases, want of exercise and recreation is the remote cause of a far greater number; and the above account of the attitude of our people toward exercise before the era of athletic sports opened was applicable to the entire continent. To this lamentable absence of proper physical training, and to the effect of a climate which renders this training preëminently necessary to increase our resisting power, there were added the evil results of yet another national peculiarity, the universal prevalence of bad cookery and neglected mastication. Drake says: "The practice of rapid eating is universal among us; that it prevails everywhere, though not adopted by every individual; the food is imperfectly masticated, and too much is taken." You will all remember Dickens' excruciatingly funny account of the dinner at Mrs. Pawkins' boarding house in New York, where dyspeptic individuals bolted their food in wedges, feeding not themselves but broods of nightmares, who were continually standing at livery within them; where the fowls disappeared as rapidly as if every bird had had the use of its wings and had flown in desperation down a human throat; where the sharpest pickles vanished, whole cucumbers at once, like sugar plums, and no man winked his eye; and spare men, with lank and rigid cheeks, came out unsatisfied from the destruction of heavy dishes, and glared with watchful eye upon the pastry. Allowing for the exaggeration pardonable in the courteous visitor who accepts our hospitality in order to write his book of travel at our expense, there was much unpalatable truth in the account. It did not need the prevalent malaria, inevitable in a new and fertile country, nor the damp, ill-ventilated dwellings that were only too frequent, to explain the prevalence of catarrh and anemia and defective nutrition, where such grave faults of personal hygiene were ignorantly practiced by the great majority. The same lesson has been learned here as in all parts of the world, that it is easy to overestimate the influence of climate, and that strict attention to the details of hygiene will insure a gradual attainment of high physical vigor even under adverse conditions. We have seen malaria diminish steadily and rapidly, and we shall see the prevalence of catarrh, with its vile habit of expectoration and its defective articulation, become a thing of the past, just as we are witnessing the replacement of the anemic light-weights of former generations by the most vigorous lads and lasses in the world. It has been my good fortune to be able for over thirty years to study on a large scale the physical and mental and moral conditions of the young people of America. I have no fear of contradiction on the part of any competing authority when I assert that these conditions have all changed decidedly for the better, and I venture the opinion that the improvement has corresponded to, and has been largely dependent upon, the specially conspicuous advance in their health.

No one of Drake's claims to the gratitude of posterity seems to me greater than that which is based upon his services to hygiene. When all around him were indifferent to it, he was unswerving in its advocacy. In one of his latest utterances, an address before the Medical Library Association of Cincinnati, in 1852, he thus bemoans the premature death of a large proportion of his medical contemporaries—then as now, often among the violators of the laws of health: "It is truly a sad thing that in the United States the progress of civilization and science shall so violate the laws of health as to shorten the lives of those who are laboring to promote it. I beseech you, gentlemen, to turn your minds to the correction of the errors of hygiene and education which lead to this melancholy result."

If space permitted, it would be well to show how rational and judicious were his views on the subject of phthisis, then already recognized as the scourge most to be dreaded in this country. The relation between the frequency of phthisis and ill-drained soil and damp and poorly ventilated buildings, subsequently worked out for Massachusetts by Dr. H. I.

Bowditch in a masterly manner, was clear to him; he recognized its infectiousness; he had learned that the main hope of averting its development or of checking its progress is to be found in careful hygiene: and he advocated strongly that phthisical patients should seek a residence in dry, cool and elevated regions.

In estimating the influence which Drake exerted upon contemporary thought on these great questions, we must remember the exceptional opportunities he enjoyed for reaching the ear of the public, as well as of the profession. For many years his house was more resorted to by distinguished visitors than any other in the cities where he resided. He was the chosen orator on nearly all important public occasions—whether in the cause of temperance, of charity, of education, or of large public improvements. He founded the first medical journal in the interior valley in 1822. He was one of the founders of the Cincinnati College of Teachers, and some of his ablest addresses were delivered before that body. Somewhat after the example of the distinguished Caspar Wistar, of Philadelphia, he encouraged meetings of a literary and scientific character at his house on a stated evening of each week. But undoubtedly the work into which Drake threw himself with the greatest ardor, next to the preparation of his *magnum opus* on the "Diseases of the Interior Valley," was that of medical education.

Of his merits as a teacher, it suffices to quote Professor Gross' assertion: "Of all the medical teachers I have ever heard, he was the most forcible and eloquent." And as to the appreciation in which he was held throughout America, it will surely suffice to state that beginning with his first call to a professorship at Lexington, Ky., at the age of 31 years, he received no less than thirteen calls to professional chairs, and he actually occupied nine separate chairs in five distinct institutions. These institutions were Transylvania College, in Lexington, Ky., where he held two different chairs at different times; the Medical College of Ohio, of which he was the founder in 1819, and where he was elected a professor no less than three times; the Jefferson Medical College, at Philadelphia, where he filled the chair of the institutes and practice for one year; the Medical Department of Cincinnati College, which he organized in 1835; and the Medical Institute of Louisville, Ky., with which he was connected at two separate periods. Naturally, these frequent changes have seemed to require explanation; nor is the explanation difficult to furnish. It was certainly not from any lack of ability nor from any want of popularity with medical students. Gross, who was his colleague in two distinct faculties, declares that when he came to the Jefferson College he was the most popular professor in the institution long before the close of the session. Eloquence such as his, ready and off-hand, had not fallen from the lips of any teacher since the days of Rush. It may be asserted that each and every institution with which Drake was so connected enjoyed exceptional prosperity while he was in the faculty, and in most instances there was a marked reduction in the size of the classes immediately consequent upon his withdrawal. I have no doubt myself that his conduct was governed by lofty motives, and that each step was dictated by his intense desire to elevate the standard of medical education in the great interior valley, to the interest of which he had dedicated his entire life and powers. Professor Meigs, who knew the facts, states explicitly that Dr. Drake accepted the chair of medicine in the Jefferson College with the express understanding that he should hold it for only one season, when he intended to return to Cincinnati to establish a Medical Department of the Miami University. He was essentially a leader and a pioneer. Of the other medical schools with which he was connected, he was either in whole or in part the founder and organizer. In all he strove earnestly for the adoption of a higher standard and for stricter methods than were approved. In each case he promptly sacrificed his personal feelings and interests, so soon as it appeared that the conditions were not favorable to honest and thorough education. No more uncompromising foe existed to ignorance and to dishonesty, and shams of all sorts. Persevering study, unswerving application, steady, hard work, had done great things for himself; he believed in them for all. He was an eloquent advocate of the public school system, and urged that compulsory education in certain branches (including physiology and anatomy) is in strict accordance with the spirit of our Constitution, and the most certain means of perpetuating them.

In 1832 he issued a little volume of practical essays on medical education—which I would gladly see reprinted and placed to-day in the hands of every medical man in the country. It is literally true that not one of the evils from which the profession has so sorely suffered since is overlooked, and not one of the remedial measures which we have striven to secure and apply is not brought forward and advocated. He points out with the unsparing finger of truth, the defects in the preparatory education of a majority of medical men. He denounces the wrong done by the reckless competition of needlessly numerous medical schools, wholly unendowed, and conducted far too largely in the personal interests of their faculties. He insists with caustic force upon the flagrant inadequacy of the curriculum then required, which covered two sessions of a little over four months in successive years, or even in a single year; and asserts that even three years of actual study with longer sessions is too short; that four years should be rendered indispensable, and that the regular course should be supplemented by summer lectures on auxiliary sciences. He demands that the didactic element in teaching shall be subordinated to such practical training as will develop the power of accurate observation. And finally he insists "that medical schools shall be placed under the supervision of the law, and thus rendered amenable to the sovereign power of the State; and further, that medical professorships shall be regarded as public offices, which are to be filled or made vacant for no other motive than the general good."

It is thus I would present to your consideration this noble-minded man, filled with the enthusiasm of genius and of devotion to humanity, and consecrated to the true interests of society and of medical science. He was decades ahead of his time. It must have been bitter to him to note that in the ensuing twenty years, from 1832 to 1852, the date of his death, there were no fewer than fifty-three medical schools organized in the United States. It would have been more bitter to him to know that the degradation of medical education was to continue unabated until even the possession of an American diploma should

become an opprobrium in foreign lands. But it is not necessary, thank Heaven, to fight over again the battle for higher medical education. It is true that the morbid process of multiplying medical schools has gone forward even more virulently than before; between 1853 and 1872 inclusive, sixty-one were organized; and from 1873 to 1890, only seventeen years, no fewer than 114 medical schools were established. The proportion of medical schools to population in other countries has varied little since the tables I published in 1876.[6] Russia has 1 school to 14,000,000 people; Brazil 1 to 7,000,000; Austria and France each average 1 to between 5,000,000 or 6,000,000; Germany and Great Britain 1 to 250,000; but the United States, which in 1876 had 1 medical school to every 477,392 of her population, can now boast that in 1890 the ratio has risen to 1 in every 440,151. But, nevertheless, the battle for higher medical education has been fought and won. The profession has set the seal of lasting approbation upon those great schools which have had the courage to enforce the needed reforms; to exact a serious preparatory examination; to lengthen the period of collegiate studies to four full years; to insist upon careful grading of the courses, and upon ample practical instruction of each student both at the bedside and in laboratories; and to establish salaries for the professors so as to lessen their pecuniary interest in the size of their classes. Professional opinion has also demanded, with the cordial concurrence of the leading schools, that State Boards of Examiners shall exist in every State, so that the questionable custom shall cease of having the qualifications of candidates for the license to practice decided solely by the men who have taught them, and who are interested in their success. Not only has the profession contributed its indispensable and invincible support to the great pioneer schools in this movement, but the public has shown its appreciation by beginning to contribute to their endowment and by insuring ready and brilliant success to their graduates. The callow brood of half-fledged schools, with poor equipment and meager clinical facilities, must accept the useful but less ambitious duty of providing preparatory training in the non-practical branches to fit students for entering the stronger institutions for their advanced work and final degree.

This law of development is already so manifest that we may cease to distress ourselves about the continuing low standard of many of our weak schools. Let us address ourselves all the more courageously to the great objects so clearly in sight; to the further strengthening of the strong schools until in endowment and equipment and facilities they not only equal but surpass, if possible, the greatest schools of Europe; to strengthening the hands of the State Boards so that their examination shall actually demand a thorough and adequate education; to insistence upon such legislation in each State as shall stop the issue of charters save to creditable persons who shall give evidence of actual resources sufficient to establish the proposed school upon a strong and permanent basis. Let us go one step further and demand, in the name of the vast interests devolving upon the medical profession, of the assured advances already made in hygiene and medicine, of the absolute necessity for concerted and authoritative action in dealing with the problems which now confront us, and which affect the happiness and prosperity and safety and life of every inhabitant of this country—let us demand, and let us persist in our united enforcement of the demand, that there shall be granted national recognition of preventive medicine, with a proper representation in the government at Washington.

What joy unalloyed would such a meeting as this have given Drake! To see his most glowing dreams more than realized; to see such a gathering representative of the entire country, in his beloved valley—drawn there not by its great natural attractions, not by the splendid prosperity of its cities, Detroit, Cincinnati, Louisville, St. Louis, Chicago, and a score of others; but chiefly by brotherly affection for her medical men and by admiration of her great schools which have so bravely and so successfully fought in the vanguard for the elevation of medical education and for the dignity and purity of the profession.

The great Mississippi waterway, which extends over four thousand miles, instead of dividing, united, and helps to weld into one, the great States between which it runs. From the mountains and highlands within its drainage area, it is now, as for ages past, carrying down to the Gulf, solid material at the rate of hundreds of millions of tons annually.[7] The leveling down of the mountains is serving to fill up the Gulf, so that the delta of the Mississippi may in time extend to Yucatan. With equal certainty is the flood tide of human life pouring into and through this valley, doing its mission. Ancient barriers of class prejudice and race hatred melt down; the East is blended with the West, and the North with the South. To-day we plan for an extension of our medical relations far to the southward, until they shall meet our brethren of the South American Republics. Already we have effected the organization of the Pan-American Medical Congress which is the final expression of the consolidation of the profession of the entire continent. Our sister Republic of Mexico extends a cordial invitation to us to attend the second Congress in her capital in 1897. As chairman, *ex-officio*, of the Executive Committee of the Congress, I have the honor to announce this gratifying and courteous act. I am confident that all of us feel that the spirit of the times, the genius of this great region, the inevitable law of our national evolution, lead us strongly in that direction, and impose on us the duty of doing our full share to render that important meeting as brilliant a success as we have made of this delightful occasion.

[6] Higher Med. Ed., pp. 46. J. B. Lippincott Co., 1894.

[7] Estimated at 362,000,000 tons a year, sufficient to make a square mile of new land, allowing for its having to fill up the Gulf to a depth of eighty yards.

ORIGINAL ARTICLES.

THE BATH IN MODERN MEDICINE.

Read in the Section on State Medicine at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY CHAS. H. SHEPARD, M.D.

BROOKLYN, N.Y.

The advance of modern medicine in the prevention of disease is gratifying to all whose studies have been in that direction. Preventive medicine touches the keynote of medical science, and its possibilities reach to the perfection of mental and physical manhood. It is in this line of medical research that the greatest good to the greatest number is to come. As mankind are enlightened they will seek necessarily,

more, and more, those who can teach them to observe mental and physical laws, that thereby they may secure a sound mind in a sound body; and, inasmuch as the onward march of sanitary science will bring about a condition in which the mere healer of diseases will be in less and less demand, a broader field will be found for the constantly increasing supply of graduated physicians in such work as instructors, lecturers, health inspectors, etc.

It is a hopeful sign that the study of medicine is to-day more concerned with the origin of disease than the verification of symptoms. By electroscopic explorations the physician is now provided with accurate methods of searching out disease, and to the microscope he is indebted for many important discoveries that have advanced the science of medicine to the plane of demonstration; that has given the germ theory of disease the importance it deserves, and contributed to the mitigation of human misery, as well as to the mastery of disease.

The living nature of contagious disease is beyond question, and it has been demonstrated that in the body of an individual thus attacked, there exist microbes capable of implanting themselves and multiplying in the tissues of a person predisposed to that disease.

The fermentations produced by the action of the microbes are toxic, and beside this there are soluble ferments which assist in the production of local lesions by breaking up living cells. The toxicity of intestinal matter is recognized as a poisonous product elaborated by these microbes. If by any reason their elimination is delayed or prevented, poisoning of the system necessarily follows from their absorption.

The human organism is a receptacle and a laboratory of poisons. Those that are formed by the disintegration of the tissues and those which are formed in the digestive tube are carried into the blood. Therefore as we know the blood is the necessary medium between the place of their formation and their elimination, man's only escape from them is by the cutaneous, renal, intestinal, and pulmonary emunctories. There is no other relief for any of the organs, and safety lies only in their normal action.

The liver protects from poisoning, by arresting on their way, before they pass into the general circulation, the poisons brought from the intestine by the portal vein, in order to neutralize or throw them back into the intestine. Then the excretory system expels the poisons which are in the circulation. It is claimed by some authorities that at least seven poisonous substances are thrown off through the urine, and all come from the blood, and that the man would die if his blood were to contain ten times as much poison as it does in its normal condition. If the skin or other eliminatory organ acts imperfectly, the patient is poisoned by the retention of the normal products, and if the kidneys perform the work of depuration insufficiently, the urine ceases to be toxic because of the retention of these impurities in the system. Man receives poisons in his food, creates them by disassimilation and forms them in his secretions, and toxic elaborations are carried on by the normal microbes which constantly inhabit the alimentary canal.

The nature of the alkaloid formed by whatever bacterium may present in the system is largely dependent upon the condition of the individual. The nature of the soil alters the character of the microorganisms that flourish upon it.

If the whole digestive system was made a matter of careful consideration, its relations to every organ in the body intelligently understood, its needs and normal wants alone administered to, the prevalence of disease would be largely abated.

Disturbances of nutrition are responsible for many illnesses of an acute character, as well as the larger number of chronic diseases. The reaction of a disturbed nervous system induces temporary disturbance of nutrition. Fatigue from overwork or pleasure exposes the system to disease that in a normal condition would be entirely avoided. The first appearance of disease implies an essential deterioriation of the organism. An imperfect action of the digestive organs may be inherited, but is more often produced by abnormal conditions. Many diseases that are marked by prominent nerve symptoms are but the first signs of poisoning due to defective nutrition. Man is as surely poisoned by the abnormal action of any function as by breathing mephitic gases or swallowing poisonous substances. Therefore the most important object in the treatment of disease is to secure some method whereby the system may be relieved of these poisons, and the earlier in the case this can be undertaken, the more simple the problem, and the easier of solution.

The fact that so many people are continually overloading their systems with excess of food is too apparent. Even though the stomach may be so weak as to pass on the offending substance, to be taken care of by the lungs, the kidney or the bowels, this excess is nevertheless foreign to the needs of the system. It becomes a poison, and is sure to cause what we call disease, the particular form depending upon the idiosyncrasy of the individual. That is why simple treatment so often relieves such a variety of diseases.

If disease, as we maintain, is naught but a vital effort for the purification and repair of the body, then whatever agency best promotes the work of elimination, at once secures this most desirable result.

The skin may be placed first on the list of eliminating organs, for the reason that it is the largest, enveloping all others, and that a larger proportion of the *débris* of the system is thrown off through the skin than by any other organ. After protecting the system by simply existing, its main function is elimination. Inasmuch as the kidneys, and in fact every organ of the body, are dependent for the perfect performance of their functions upon the character of the blood, as well as upon the circulation, none can be more important than the skin, because of this very depurating power. It is a most important fact, that a more powerful drain can be made upon the system through the skin, than by any other organ, and this without disturbing the harmonious working of any function.

The action of heat upon the blood internally, while passing through the capillaries of the lungs, and also upon the capillaries of the outside skin, is most salutary in destroying the virus of whatever disease may be present. There is no more powerful disinfectant than hot air, and a report recently made to the British Medical Association, demonstrates what hygienists and sanitarians have long contended for, that sunlight and fresh air prove of more avail

in the disinfection of tuberculosis than any other measures, and hot air is but the liberation of stored up sunlight.

While bacteriologists are not fully agreed as to the precise manner, or the agencies by which the blood carries on the warfare against disease producing bacteria, the weight of evidence favors the theory that the white corpuscles are the common defenders and scavengers, but all must agree that with a pure condition of the blood and a perfect circulation, its bactericidal power will be at its highest activity, and that this form of immunity is of all others the most desirable.

Thanks to the therapeutics which the body constantly exercises upon itself, man lives. The course to be pursued in the general therapeutics of self-poisoning is to prevent the poisons from being formed, to oppose their penetration into the system, and if they have been absorbed, to try to destroy them, or to stimulate the action of the liver, which is a physiologic destroyer of poisons, and further, to encourage the elimination of poisons by the skin, the lungs, the intestines, and the kidneys. Of one thing we may be certain, in the treatment of auto-infection, that if there is vitality enough to neutralize or throw off the poison, it will be done more readily and more thoroughly by relying upon and assisting the natural emunctories than by introducing other poisons to neutralize the first. Particularly is this true in regard to what are called tonics or stimulants. Whatever excitement they may arouse is so quickly exhausted and is derived at such a great expense of vitality as to make their use of more than doubtful utility.

In most diseases the active poison is the natural one, resulting from the more intense disassimilation, or from more rapid cell destruction, setting at liberty imperfectly oxidized material.

The use of vaccine, tuberculin, antitoxin, and even animal extracts, has been found to be attended with disadvantages. The most desirable in the list of artificial remedies seems to have some drawback, and though the search has been long and diligent, success in finding a panacea is as far off to-day as it was one hundred years ago. The mere list of fads that have had their day, to be laid aside for new ones, would fill volumes.

But there is one direction in which we can work with assurance of success, and that is in the matter of personal equation. By purifying and fortifying the body, we enable it to cope with the most virulent diseases. Unless this can be accomplished, sanitary science will have labored in vain.

The sickening and deceitful flood of nostrum advertisements can be overcome, and the community protected, only by disseminating the fundamental truths of sanitary science, and facts regarding hygiene, and its application to human needs. Physical health is necessary to perfect mental health, and as health is governed by certain well defined and easily understood laws, it follows that it is a moral obligation on every one, of sufficient capacity, to become acquainted with these laws and live in obedience to them. The amount of ignorance on these subjects is appalling, and calls for an unlimited amount of self-sacrificing work by every physician who considers the public good of more importance than mere personal gain. It is certainly better for the medical man to lead in this matter, than to leave it to the charlatan, or to wait for the outside pressure of an enlightened public opinion that is sure to come.

While the practice of to-day is in accord with the most advanced thought, and certainly is a great improvement upon the sanguinary era when patients were bled to exhaustion, or when they went to their death in a state of intoxication, the time must come when many of the practices now in vogue will be superseded by a still more enlightened and scientific treatment.

An abundant use of pure air always produces a quickened activity of all the vital forces. Suitable exercises are certain to quicken the circulation and bring therewith corresponding benefits. The judicious use of water, both hot and cold, is universally attended with benefit to the whole system, and there is a charm about bathing that commends itself to the good sense of every individual, were it only for the feeling of purity which it engenders, but when there is added to that the reality of protecting the body from attacks of disease, as well as relieving it of discomfort and pain, then the use of the bath enters the realm of prophylactics and remedial agents. There are many kinds of baths, from the sponge, the river and the sea bath, up to the hot air or Turkish bath, and all have their place, though some are more capable of being utilized in a general way, and made more useful than others.

The natural elements, air and water, are indispensable to the existence of life, and when modified by another natural element, heat, they become the most powerful, most salutary and unfailing agents yet discovered for the preservation of life, and the alleviation of those numerous derangements to which life is exposed. This is no new principle or novel theory; on the contrary, it has been known, though at times imperfectly practiced, for thousands of years, throughout the globe, and is to-day, in spite of discouragement, receiving scientific and practical development.

All religious institutions were based upon the ceremonial of cleanliness. Baptism and bath are synonymous terms. The ancient history of Egypt, of Africa, of East India, China, Japan and Persia, all give ample testimony to the efficacy of the bath in the treatment of disease. Ancient Britain also gives abundant evidence of the same result. As early as the sixteenth century, publications were issued advocating the use of cold bathing in disease, and one authority of the seventeenth century says: "No part of physic is more ancient than cold bathing."

Suetonius relates that Cæsar Augustus recovered from a dangerous illness, after his other physicians had pronounced his case desperate, under the simple hydropathic treatment of his freedman-physician, Antonius Musa, who had been his domestic slave, and who had studied medicine while in the condition of servitude. He appears to have understood the curative properties of cold and hot bathing in relation to particular diseases, and to have been well acquainted with the efficacy of diet and regimen, which he also employed in the case of the Emperor. This event wrought a great change in the public sentiment regarding practitioners of medicine. Musa was rewarded profusely. He received a large sum of money, was exempted from all public taxes, was given the freedom of Rome, allowed to wear a gold ring, and his statue was placed next to that of Esculapius. In further honor of him, the professors of physic were

then, for the first time, admitted to the immunities of Roman citizenship.

That thermal springs which are found in every quarter of the globe, first suggested hot bathing, is shown by the fact that all of them have been utilized for that purpose, from remote antiquity, and by all people, from the rude untutored savage to the most civilized nations.

Heat is at once the simplest and the most powerful of all the agencies of nature. It is the heat from which is derived the most important part of the beneficial effects of warm bathing, and the superiority of air, in comparison with water, as the medium of a bath, is evident, for the reason that water can not be used for communicating heat to the body at a temperature much beyond 100 degrees, whereas air can be utilized for ordinary bathing at from 140 to 175 degrees, and for the remedial purposes much higher. It is this perfect command of temperature which the hot air bath places at the disposal of the scientific and skilled physician that constitutes its superlative merit.

The existence of the bath during thousands of years in every part of the world, gives abundant proof of its value, and it will be seen readily, that when the bath has been used as a curative in disease, the one great object in view has been to bring into play the action of air, water, and heat on the human body so as to excite perspiration.

From the fact that the form of treatment secured by the Turkish bath unites all the elements, making it a perfect combination of air, water, and different degrees of temperature, comes our belief and assertion that this form of bathing is bound to supersede all others, as being more complete and useful in every respect, and is eventually and inevitably to be recognized as the most potent agent in the physician's armamentarium. It is a process which will in a few minutes secure a general diaphoresis, bring the circulation to the extremities, equalize the arterial action, soothe disordered nerves, while it allays spasm immediately. It is obvious that such action would be of great service in every case of internal congestion, and in obviating diseases of the liver and kidneys. In the treatment of diseases of the joints, its efficacy is remarkable, also in all classes of cutaneous diseases. In bronchial or laryngeal inflammation the surface affected is instantaneously reached, and instances of gradual relief from chronic disorder, particularly gout and rheumatism, might be multiplied without end. At the same time it is an incomparable luxury, and most valuable as a means of training in health. In all diseases it is a remedy or palliative.

It is only necessary that the properties of the Turkish bath should be really understood to insure its adoption by an intelligent public. Its simplicity and natural action place it in antagonism to all empiricism. This bath stands alone on its merits, a great and acknowledged power. It will remain to diminish the pains and penalties that afflict the large majority of our fellow creatures, and to increase the good things that fortune showers upon us. It is at once the perfection and glory of all baths.

81 Columbia Heights.

INJECTION OF HERNIÆ.—Luton has recently reported (*Revue Mensuelle des Maladies de l'enfance*) that he has many times cured infantile berniæ by injection of 1 gram of a solution of sodium phosphate and sodium sulphate.

WHY BALTIMORE IS A HEALTHY CITY.

Read in the Section on State Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY D. W. CATHELL, M.D.

BALTIMORE, MD.

Baltimore lies in latitude 39° 18′, longitude 76° 36′. It is situated on the Patapsco River, one of the tributaries of the great Chesapeake Bay, which divides the State of Maryland into two portions—eastern and western, the city of Baltimore being on the western portion, about fourteen miles from the junction of Patapsco River with the bay. We have an excellent and large harbor for our shipping.

Baltimore covers an area of thirty-one and one-half square miles, and like Rome, may be said to lie on seven hills. Its soil is both healthy and favorable for building. The city has 99,987 houses, with an appraised value, including the ground, of $274,000,000. Its population, as ascertained by the police census of 1894, is 496,315, of whom 422,568 are white and 73,747 are colored. It has 780 miles of paved streets, with 234 miles of rapid transit street railways, running 785 cars, some cable, some electric, each car being provided with a fender in front for the protection of life and limb, and all stop to take on or let off passengers at the near side of the streets, instead of crossing the street before doing so, and each must come to a full stop before crossing any intersecting railway. By these rules our street railway accidents are reduced to a minimum, and in addition to business, car-riding for pleasure is a source of both recreation and health to our people.

Our city has an inexhaustible supply of excellent water, chiefly from the Gunpowder River, kept in eight separate storage reservoirs, which have a total capacity of 2,274,000,000 gallons, the daily consumption of water being 45,000,000 gallons, while the daily capacity of supply is 300,000,000. This is one of our chief sources of health.

The rich and diversified soil, the swarming waters, and the teeming forests about Baltimore furnish an unsurpassed abundance and variety of food. Added to these, we have an unequalled climate for permanent residence, for neither the cold of our winters nor the heat of our summers continues long enough to entail deleterious effects on the general health. Our snows end with March and our autumn frosts begin with November.

Baltimore is chiefly surface drained, and although it has about thirty-five miles of underground sewers, the function of most of these sewers is to carry off storm water from certain localities.

The city has no slums, and comparatively few tenement houses, although, like all large cities, there are many thickly populated neighborhoods where many poor people live too closely huddled.

The mean temperature for 1894 was 55.9 degrees; the highest temperature of summer was 98 degrees F.; the lowest in winter was 7 above zero. Our average annual rainfall is 44 inches; the number of days on which rain and snow fell in 1894 was 134, and strange to say, the greatest monthly precipitation was in May, $7\frac{1}{5}$ inches, and the least was in March, $1\frac{1}{4}$ inches.

The total mortality in the city of Baltimore for the year 1894 was 9,486, of which number 7,242 were white persons and 2,244 colored, being a marked decrease in comparison with the five preceding years,

notwithstanding a decided increase in population. Our death rate for 1894 was 20.84 per 1,000, but if the death rate per 1,000 were computed as in other cities, upon an estimated population, instead of the U. S. census of 1890, it would show a rate of only 19.04 per 1,000 for the whole population, which would make Baltimore rank high among the very healthiest cities in the world.

Among the 9,486 deaths there were 1,085 deaths of persons above 70 years of age.

Taking the different periods of life separately, there were:

Under 1 year	2,616
Between 1 and 2 years	669
" 2 " 5 "	476
" 5 " 10 "	255
" 10 " 15 "	143
" 15 " 20 "	316
" 20 " 30 "	778
" 30 " 40 "	780
" 40 " 50 "	735
" 50 " 60 "	801
" 60 " 70 "	832
" 70 " 80 "	701
" 80 " 90 "	322
" 90 " 100 "	59
" 100 " 110 "	3

The ratio of deaths of children under 5 years of age to the total mortality was 39.5. In addition, there were 721 still-births during the year.

The death rate among our colored population is always greater than that of the whites. This I attribute chiefly to their few opportunities for advancement, compared with those of the whites, coupled with their meagre comforts, limited opportunities and relative lack of knowledge of sanitary laws. Thus, in 1894:

The annual death rate per 1,000 white population was	18.85
The annual death rate per 1,000 colored population was	31.60

Among the chief causes of death in 1894 we find:

Consumption	1,106
Pneumonia	790
Cholera infantum	440
Disease of heart	438
Cancer	264
Bright's disease	226
Typhoid fever	222
Diphtheria	198
Diarrhea	144
Influenza	132
Whooping cough	112
Accidents	109
Bronchitis	90
Scarlet fever	85
Childbed	82
Dysentery	72

The number of deaths in public institutions was:

Baltimore city jail	2
Penitentiary	15
Hospitals and asylums	976
Deaths reported by coroners, including inquests	770

During the year there were 777 interments in the two public cemeteries, Eastern and Western, at the public expense.

A comparison of the mortality in Baltimore for the past five years shows the following decreasing ratio:

	Ratio per 1,000
1890	22.41
1891	22.13
1892	21.77
1893	20.99
1894	20.84

The vital statistics of our race tell us that the average duration of human life is about thirty-seven years. Up to 1875 there were no reliable vital statistics kept in Baltimore; and I am ashamed to tell you that even now, almost at the dawn of the twentieth century, we have no complete record of the births; but of the 174,923 deaths that occurred in Baltimore, during the twenty years ending Dec. 31, 1894, we find the following large number of age decedents:

Between 40 and 50 years of age	12,651
" 50 " 60 " " "	12,752
" 60 " 70 " " "	12,800
" 70 " 80 " " "	10,779
" 80 " 90 " " "	4,972
" 90 " 100 " " "	759
" 100 " 110 " " "	95
Above 110 years of age	13

Nature has done a bountiful share for Baltimore and man has done much to aid her, and of this her physicians have done their full share. We have about four hundred and fifty regular practitioners in the city, beside quite a sprinkling of irregulars of all shades and colors. We now have laws regulating medical practice, which bid fair to be of great benefit to the community. Beside the great Johns Hopkins Hospital, we have scattered through the city and suburbs, the Hebrew Hospital, Bay View Asylum, Mount Hope Retreat, Spring Grove Asylum, Wilson Sanitarium, Samuel Ready Home, Maryland Blind Asylum and numerous other and well-managed hospitals and homes; some for the sick, some for the insane, and all for humanity, and each of these is doing its full share toward making Baltimore a healthy city.

In addition to all these, we have various sanitariums, retreats and homes for sick children, free excursions for the poor, asylums, etc., which I might describe and praise too, if time permitted, but if prevention is better than cure, then these institutions all unite to do a power of good.

Among other medical features, we have five regular medical colleges that send forth a total of about five hundred graduates yearly.

We have lovely suburbs, which teem with the summer homes of our wealthy citizens and the cottages of our middle classes; and our woods and parks, river and bay swarm with excursionists and picnickers during warm weather.

Within our city limits we have 861 acres of public parks, divided among Druid Hill Park, Clifton Park, Patterson Park, Riverside Park, Harlem Square, Lafayette Square, Union Square and a dozen others, each acting as a resting and breathing place for our people and each adds its share to Baltimore's healthfulness.

We are told by all travellers, that our Druid Hill Park is one of the most beautiful natural parks in the world.

We also have several hundred ever-flowing public drinking fountains scattered here and there about the city, which are a great source of comfort and health, to both man and beast, especially during the summer months.

We have a well organized and highly efficient Health Department. A brief synopsis will show the important duties and responsibilities devolving on these, our custodians of public health, in 1894. It has a permanent corps of twenty-two vaccine physicians, whose number is increased when emergency

requires. During 1894 they made 48,475 calls, and vaccinated 42,042 persons. Vaccination is compulsory, and no unvaccinated child is allowed to attend the public schools of Baltimore. This is another of our sources of health.

Our food inspectors inspect all food products, condemning any and all that are unfit for use. During 1894 they condemned 67,322 pounds of various kinds of meat and 1,449 pounds of poultry, thus sparing our olfactories and guarding our health.

Our milk inspectors examine milk, and spill into the streets all that shows by the lactometer a less specific gravity than 129, at 60 degrees F., or is proven by microscopic examination to be adulterated or dirty; and for these causes during the year 1894, 6,679 gallons were condemned and spilled. Our milk supply for the year consisted of about 8,000,000 gallons of milk and cream, brought to us by twelve railroads and seventy country wagons, added to that gotten from the 1,126 cows kept in the city.

We have an inspector of plumbing and drain work, whose duties and importance to the public health are obvious to all medical men; 3,595 inspections were made during the year.

We also have an inspector of buildings, whose duties require him to see that all new buildings are erected with regard to safety to life and limb, and every dwelling house erected, however small, is compelled by law to contain a bath-tub—another decided source of cleanliness and health.

There are two inspectors of covered gutters and sewer inlets, who make daily visits of inspection, cleaning and disinfecting wherever and whenever necessary. Thirty-six tons of carbolate of lime were used by the Health Department in 1894. Their value to the public health makes it money well spent.

Our coroners, five in number, are all physicians, and in addition we have two post-mortem medical examiners, who made seventy-three post-mortem examinations for the authorities during the year.

We also have a public morgue, to which 163 bodies were sent—127 white and 36 colored; 140 of these were males and 23 were females. Eighty-one of these were subsequently claimed and buried by their friends.

Baltimore has now a new and efficient quarantine hospital, with a disinfecting plant, equal if not superior to any in the country. This hospital is on the river, a few miles below the city, and is in charge of a quarantine physician and his assistants. Five hundred and three vessels were boarded and inspected during the year 1894, and twenty-four patients with infectious diseases were treated in the hospital. During the year, 7,692 unsanitary mattresses from emigrant steamships were destroyed in this port. Baltimore is the only American port in which they are totally destroyed.

The city has twelve sanitary inspectors, who examined and abated 20,582 nuisances during the year, and had 286 vacant lots drained and filled. It is also their duty to examine into all cases of contagious diseases: diphtheria, scarlet fever, croup, measles, smallpox, etc., and to disinfect the premises after recovery. In 1894, 1,977 cases were reported by the attending physicians, who are compelled by the laws to report every case. The importance of these rules in maintaining public health could scarcely be overestimated.

There were issued by the Health Department during 1894, 59,923 notices and orders to place premises in more sanitary condition, and 74,874 permits to clean privies were given; and every year on the approach of warm weather all persons are compelled to place premises and privies in a sanitary condition.

In regard to night soil, 90,721 air-tight cart loads, equal to 18,144,200 gallons of liquid material, and 268,466 loads of garbage and ashes, were removed from the city in 1894, all by daylight, the former by what is known as the odorless system, to the two dumps, and were carried thence down the river in scows, and disposed of to agriculturists. There were also removed 169,915 loads of street dirt and sand.

In some portions of the city the streets are cleaned by sweeping machines, but the dirt is taken from the majority of streets, lanes and alleys by laborers, scraping and sweeping. The daily average number of loads of street dirt removed was 600; and beside this, during the year, 9,987 cart loads of refuse and filth were removed from the various sewers, sewer inlets, and covered gutters, and 1,105 cart loads of vegetable and other offal were taken from the various city docks, all with a view to maintain the public health.

In addition to garbage and dirt carts, we have covered wagons for the removal of dead animals, fowls, tainted meat, etc. During 1894, 45,211 of the former and 2,713 pounds of the latter and more than 112,000 fish, crabs and eggs were removed, and all done so quietly that probably many of our people do not even know of the existence of such wagons.

Our police force ably assists the health authorities in carrying out all laws relating to the public health. It consists of 808 officers and men, maintained in 1894 at a cost of $825,000. To say that we have a model police organization with a most excellent detective service, would certainly be no exaggeration. We have seven police stations and to each station is attached one of the vaccine physicians and a patrol wagon. These wagons not only carry arrested persons from the signal-box nearest the point of arrest, but are also utilized for the humanitarian duty of carrying sick and wounded persons to their homes, or to the hospitals.

There are two abattoirs and quite a number of slaughter houses, all under private management. These are among our chief unsanitary features.

Baltimore is lighted by 1,039 electric lights, costing 35 cents each per night; beside there are 5,932 gas lamps and also 1,036 gasoline lamps, in small streets and alleys where there are no gas mains. These all conduce to safety of life and limb to pedestrians, and help to secure our persons and property against evil-doers.

A few additional words: I do not wish any one to infer that all of our improvements have been made at once, nor that they have suddenly dropped to us from the skies, or that they have been handed down one by one from the rainbow, as in fairy tales; far from it! They have cost much time, much labor, and much money. Our city has exerted herself and must continue to do so, for there are other great strides to be taken before she reaches sanitary perfection. But Baltimore is a progressive city, and when our brethren of this ASSOCIATION favor us with another session I hope to be able to report further and greater advances.

Among other things we must establish and maintain perfect supervision over our water supply, and

protect it against any and every possible source of pollution.

We must adopt a more rational and scientific method of disposing of our garbage, fecal matter and other offal, either by desiccation or cremation.

We must abolish our abominable privy vault system and adopt dry earth closets, or some other still better method.

We must legislate the 97 cow stables, with their 1,126 cows, and all other nuisances, out of the city, and keep them out.

We must abolish, together with all other pathologic industries, every private slaughter house, and place all abattoirs under such rules as insure full protection to the public health.

We must devise some method of securing perfectly accurate statistics of births.

Free public baths on an ample scale, centrally or conveniently located for the masses, should be established.

The unjust yearly tax of $3 for each hose attachment for sprinkling and washing the pavements and streets in front of one's residence, should be forever abolished, because these promote the public health.

The dangers of every unsanitary lane and alley in Baltimore should be removed by making it smooth with asphalt.

We, also, badly need a public disinfecting plant for the city, and a city hospital for the care and treatment of the milder contagious diseases, *i. e.*, scarlet fever, diphtheria, measles, etc., while smallpox, yellow fever, cholera, etc., should continue to be treated at the quarantine hospital.

I am also strongly of opinion that our Health Department should be separated and isolated from all other city departments and placed in a building of its own, so that a citizen going in to pay his water bill, or to enter either of the many other departments adjoining, will incur no risk of encountering any one suffering with or coming from a case of contagious disease—a building where each function of the Health Department can be carried on separately.

Thus would I briefly attempt to point out a few of Baltimore's many advantages, and to give you a glimpse at her vital statistics and her sanitary agencies; and, also, to frankly tell you of some steps still required to push her up to the full measure of a perfect metropolis.

I shall mention one other great blessing we possess, and I am done; that is, that in addition to all else, *Baltimore is a lucky city*, for in addition to having hosts of worthy men and noble women, she escapes many of the sorrows that fall to some other communities, for she is neither subject to earthquakes nor volcanoes, tornadoes, cyclones nor blizzards, and neither war nor pestilence has ever laid its hand heavily upon her. Beside, she has suffered no great fires, no sweeping floods, no withering droughts, no ghastly famines, or other dire calamities. And thankfully appreciating these facts, *we, her citizens, "with malice toward none, but with charity for all,"* We, Her Citizens, *are determined under God, to exert all the powers of our hands, and of our heads, and of our hearts, to make fair Baltimore, in the future as she is to-day, one of the healthiest and happiest cities in the world.*

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THE IMPORTANCE OF THE STATE GOVERNMENT CONTROL OF ARTIFICIAL AGENCIES THAT MAY BE PRODUCTIVE OF NOISES.

Read in the Section on State Medicine at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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The inhabitants of the American States have long been noted for their hurrying and bustling habits, for their ceaseless, restless activities, and for their all but immodest disposition when setting themselves about to accomplish a purpose, not to intrust the fact to the keeping of a silent herald. So marked have these characteristics become and so influential have they been in modifying the development of their personality that Europeans, surrounded by other amenities and pleasures, have fancied that the average American citizen is still but a son of the forest, that the noises incident to his movements are only the rustling of his feathery head-gear, that the implements of his trade are the disguises of the tomahawk, and that the acclamations expressed upon the success he attains are not unlike the war-whoop of his aboriginal predecessors.

After eliminating from our field of vision all the extravagances of imagination indulged in by trans-Atlantic personages, there is, nevertheless, much that having been borne along by our peculiar methods of action has become more and more the subject of the deepest concern, and requiring also for proper correction continued interest and cöoperation on the part of all. Not the least among the factors inimical in no small degree to our health, comfort and repose, are the noises that are on all sides produced by artificial agencies. Perhaps in the decades that have preceded ours, a person would not have been deemed patriotic or public spirited had he entered his protest against occurrences which have been regarded as incidental to the affairs of the greater moment, but it must be remembered that the rapid multiplication of the agencies in question has been carried on much more with the view of enhancing private interest than of providing for the needs of the public at large.

The employment of the tramway system upon the streets of American cities was at first considered not only as an innovation, but also as an encroachment upon private rights; this system was at length endured and patronized by the abutters for the reason it was felt that those less favored might with greater facility be enabled to reach the more distant points of their destination. The introduction of the trolley cars into the larger cities is not only an encroachment upon private rights of the inhabitants, but the whole management of such ponderous machines, through the crude and unscientific principle of construction, is not only a waste of force, but its practical application becomes a veritable nuisance. Such a method of conducting travel we have reason to fear will to a very great extent continue to be so, on account of the insufferable noises that must necessarily result from the operating of such cars by the companies for the sole purpose evidently of gain. Such harsh, bewildering sounds, such fiendish, hideous clangor with which the ears of the would-be

sleeper must ever ring, can not but act injuriously upon his whole organism. Though legislative enactments thus far have not been put forth in the direction to lead to the abatement of the evil, yet there is no sufficient reason why the State should not take cognizance of any factor that may disturb to such a degree the health and comfort of mankind.

No good reason can be offered why boards of health should not be clothed with all necessary powers for the supervision of travel and of exercising a salutary control over all the means for accomplishing the same. Indeed, there is more reason why such powers should be delegated than there is for granting authority to institute measures against an apothecary or other dealer who may chance to sell a package of sal soda, or of sal tartar, or to dispense a vial of laudanum, or other quite unimportant article, which may not be up to some arbitrary standard of weight or measurement.

All must admit that there are unnecessarily made disturbing noises that should be prevented by legislative enactment. The numerous whistles and bells employed on railway trains are often deafening in the extreme, and thus become the source of much discomfort, not only to persons who may be suffering from severe illness, but also to the inhabitants of an entire neighborhood. The ringing of church bells, that betoken the coming or the presence of the parson, is often a merciless herald to those who may be too unfortunate to attend the meeting for the appointed service.

It is becoming more and more apparent that in our country, where the public affairs are sought to be managed by popular sovereignty, less attention is paid in response to the actual needs of the masses than in those countries where the will of the people exercises but little influence in the election of rulers. The hurrying through our streets, often at most unseasonable hours, of brick wagons, ice carts, milk teams, market men's loads, beer carts, and of the numerous other vehicles, all for private gain or for a syndicate's exchequer or for a company's till, is most uncongenial to all and is often prejudicial to that large number who are dependent for their activities on quiet and refreshing sleep.

Those who are weak, or who are suffering from peculiar idiosyncrasies, or whose proper psychic balance is dependent on favoring influences, should not be left to suffer through the capricious temper, or be brought under the power for gain of the heartless and unfeeling members of the community. I venture to say that in almost every municipality of our metropolitan district, or our Greater Boston, the daily noises incident to artificial agencies, to say nothing of the avoidable noises made by persons who have not the slightest regard for the public welfare, are frequently greater than what are heard in many of the larger European cities. When any complaint or remonstrance is presented to the officers of the law on account of the ruthlessness of such persons, the answer almost invariably returned is that noise is but a mere inconvenience. It has not been uncommon in my own practice, and I feel certain that it is not unusual in the practice of other physicians, to have patients who, while undergoing the effects of long and exhausting illness, are compelled to endure their full share of this brain paralyzing and nerve destroying agency.

It has long been a recognized fact that in man the greater part of the impression that is received reaches the sensorium through the medium of the different special senses. Odors that are agreeable produce, for the most part, a salutary effect upon the organism; those that are disagreeable, when endured for long continued periods, exercise an injurious influence. Objects, especially articles of utility, presenting rich and beautiful colors are conducive to the health and strength of the person; the same may be said of all agencies that transmit through the several special channels of communication pleasing and agreeable impressions. Undue irritation or excitation of any one of the senses or of the organs of the body is liable to effect pathologic changes, either from producing immediate and serious derangement in the histologic elements, or from not allowing sufficient intervals for rest and recuperation. The intricate and delicate arrangement of the auditory apparatus is no exception; it can not repel the persistent assault from noises thus made upon it without becoming the center of a diseased condition. Persons who are exposed to such harassing attacks appear dwarfish, undeveloped, or with a retrograded intellect, morbid in their impressions, and if, perchance, they should rise to any considerable degree of activity, they would still be prone to relapse into a listless state that borders on neurasthenia, and to other varieties of the neurotic state.

When one comes to consider what hideous noises are endured by the inhabitants of our more densely crowded municipalities, it would seem that such people are, indeed, lacking in moral stamina; that they are really deficient in what is essential to the development of the higher attainments of mankind. It may be said, however, that the pursuing of the personal aims and ends of the individual tend to lessen interest in matters not directly conservative to such attainments; there then will be brought about no unity of action and no well directed opposition to encroachments on rights regarded only as public in the advantages which they insure.

In order, therefore, to overcome the several factors diverse to the higher accomplishments for the public welfare, and to elicit personal attention, irrespective of private enjoyment, for the support of such measures, it will become necessary to bring into operation other methods, to be carried out in all their details for the proper administration of affairs of state. The building of great public thoroughfares, and especially the grading of such avenues of travel, should be carried on more with the view of conserving all the elements of public health and convenience than of adding features that may be helpful or useful in merely one direction only. In this connection may be mentioned notable instances of the unwise policy so often pursued in the paving[1] of many of our most important streets with rubble stone, or with stones that have been broken into cubes or blocks, and then laid in the usual manner of doing such kind of work. Streets thus prepared become not only the source of great annoyance to the inhabitants by the loud rumbling, by the rapid driving over them of the many heavy wagons, which is often done at unseasonable hours, but they also become, as all sanitarians admit, the source of danger from being the receptacle of filth from drainage matter that continually gravi-

[1] See Medical News, of Philadelphia, August, 1893. See also the October number of the same year of the Buffalo Medical and Surgical Journal. In both of these journals the baneful effects of city noises are ably discussed.

tates into the interstices between the stones, that are laid in such a primitive manner. The employment of concrete, cement or asphalt,[2] or other similar material, on our streets, as is usual in some foreign cities, would be an improvement and would fulfill most of the purposes for which such streets are graded. The use of properly constructed vehicles, the regulation of the driving, and the hours allowed for the travel should be under the strict control of the government officers. Much of the noises of our street car system could undoubtedly be prevented by the more general adoption of underground ways, or, by what is a better system, the building of roads after the manner of the Ringbahn, of Berlin. If the latter should be adopted the stations might be at greater distances from each other. Tramways, with cars of light gearing, should be the only ones allowed for intramural service. While the fostering of a patriotic spirit should be encouraged and allowed the broadest latitude on all proper occasions for its true exhibition, its conservation should not be jeopardized by the government's yielding to the caprices of unthinking persons, as is so often shown by its resorting to vain and useless mockery in its attempts at public celebrations. On such occasions the discordant ringing of bells, the blowing of horns, the loud cracking and firing of torpedoes, the display of what may really be regarded as "antique and horrible," have helped to displace many of the better class of residents of our eastern cities, and have likewise been the source of much discomfort in their relationship, but unfortunate in their location and surroundings.

As I said before, I can recall as occurring in my own practice numerous instances of persons who have been victims of such public disorder, or instances of persons whose recovery has been materially retarded by the demonstrations of such public license. Have not the minority or the few people who thus suffer, some vested rights that the majority is bound to respect? Surely, the persons whom the physician for the most part is summoned to treat, belong to this latter class. It is in the interest of this class, and for the more unfortunate, generally, that the true physician was first led to choose for his life work the profession of medicine; that he ever seeks by the employment of all his energies to improve his talents for the attainment of the highest good. This he does that he may fulfill the mission to which he feels that he has been called by divine appointment.

REFORM IN MEDICAL EXPERT TESTIMONY.

Read in the Section on State Medicine at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY S. S. HERRICK, M.D.

SAN FRANCISCO.

The disagreement of doctors is both a proverb and a reproach: a proverb, as if it were constant and axiomatic; a reproach, as if it were needless, unreasonable and peculiar. If medicine were an exact science, men with equal opportunities for acquiring it might be expected to agree substantially, as they do in chemistry and physics; but the personal equation is a disturbing element in the mind of both physician and patient, of a variability defying the power of the differential calculus. That other people should disagree is a matter of course, and generally of no consequence. Clergymen disagree widely in doctrines believed to affect supremely the eternal welfare of mankind, and in this land of liberty and toleration a large fraction look on with indifference, and the remainder with serenity. Lawyers are paid to disagree; their clients are not satisfied unless they are radical and stormy in variance; yet lawyers are loudest in complaining of the disagreement of doctors, especially when they may be supposed to be paid for it.

The above is said rather to explain than to justify the ground of complaint. Substantial agreement in medical testimony is very desirable and probably possible, though at present impracticable in particulars. This much by way of introduction to the special subject, which has reference to expert medical testimony in courts of justice.

"'Tis true, 'tis pity, and pity 'tis 'tis true," that the figure generally made by physicians as experts is embarrassing and often discreditable to themselves, and that the oft-repeated spectacle has brought reproach on our calling; but I hold that the fault is rather with the system of taking medical expert testimony than with the witnesses themselves. Their services are sought for the purpose of supporting the claims of parties in contest, and their opinions are always known beforehand by the lawyers who call them. If their views were not known to be more or less favorable to the party requiring them, they would be avoided rather than sought.

Furthermore, physicians are human, and can hardly escape bias in favor of a friend who happens to have a case in court, whether as client or attorney. He is asked by an interested party, friendly to himself, to give opinions, knowing that, if favorable, they would be more acceptable than unfavorable ones, and he is too apt to assume a partisan rather than a judicial frame of mind. The main check to such insensible bias is dread of cross-examination. Still more to be deprecated is the custom of paying a considerable fee to the expert by the party employing him. If this be given in advance, it is fairly presumed to secure the most favorable opinion possible; if not given beforehand, then it is expected that the honorarium will be according to the value of the testimony. In either case the fee is demoralizing to average human nature. On the other hand, expert testimony without a fee, either express or implied, is given grudgingly. Parties in court find themselves in a situation like that of people at a public table who feel constrained to fee waiters in order to secure good service. The comparison is humiliating to members of a liberal profession, but human nature varies less in kind than in degree in different stations. Here it is fair to remark that physicians are no more responsive to a pecuniary inducement than lawyers, or even clergymen. Pleading and preaching both have a recognized money value; the dispensers are not apt to depreciate their own worth, and sensible people pay them accordingly.

Under the existing practice of taking medical expert testimony, lawyers intend to use physicians for partisan purposes, and whatever moralists and the public at large may think of the consequences, the legal fraternity have no more right to find fault with experts than duelists have with each other's weapons. It is wrong for the law to allow medical men to be used as partisans in such controversies. An effectual remedy is needed for this abuse, both to spare the ex-

[2] Op. cit.

ert such degradation and to promote justice, and his we shall now consider.

The first and essential requisite is, that expert witnesses should never be chosen by parties in contest, or by their legal representatives, either in civil or in criminal trials. If possible, their opinions on questions at issue should not be known beforehand. I would suggest that the court be authorized by law to summon a suitable number of persons to act in the trial as experts, that they be questioned as to any possible bias in the case, and that counsel on both sides have the privilege to object on such grounds, as in case of jurors, but without privilege of peremptory challenge. The court, jurors and counsel on both sides should then have a right to question the expert. Such a plan would give him a judicial position, more satisfactory to himself and vastly more conducive to fairness and justice. The law should allow adequate fees, according to the value of the expert's time in his ordinary business, to be fixed in the judgment of the court and included in the ordinary costs of trial.

I am clearly of opinion that legal counsel should not be allowed to suggest names of experts, nor to have anything to do in their choice beyond aiding in the discovery of any possible bias, and objecting for such cause. Neither should they be taken at hazard from a list of practitioners, as jurors are drawn from a polling list. A man competent to preside over a court may be trusted to select experts from the best of their class. In a city there is ample room for choice, but in a rural community it might be necessary to summon men from a distance.

The court should be authorized, in his discretion, to require one or more experts to listen to the testimony of ordinary witnesses, before giving their own opinions, for this course would obviously qualify them to understand the case and assist to a just and correct decision. This might be made optional with putting a series of hypothetical questions. In either event the same precautions should be used to guard against outside influence upon the experts as are taken with the jury, and for the same reason.

Since the foregoing was written, I observe that the Illinois State Medical Society has proposed a legislative act authorizing the judges of the Circuit and Superior Courts to appoint experts in medical and other sciences, for the purpose of giving opinions upon the evidence as presented in hypothetical form in both criminal and civil trials. The term of appointment is to be one year, and the judge may summon as many as three in one case. They are to be subject to cross-examination, but only upon points touched in their opinion. I think it safer that experts in an important trial be selected for the occasion and at the opening, so as to preclude their being tampered with by interested parties beforehand. Their opinions should be no more forestalled or anticipated than those of the court and jury.

This matter is one for each individual State to settle within its own jurisdiction; likewise for the national government within the purview of the federal courts. It would be well for a suitable example to be set by a Congressional act applying to trials in federal courts, and then we might hope that the several States would take like action so as to make the practice substantially uniform throughout the country. In my judgment it would be fitting and helpful for the AMERICAN MEDICAL ASSOCIATION to urge upon Congress some such measure as the one here briefly outlined, not only for the credit of our profession, but still more in the interest of justice.

THE PREVENTION OF ASIATIC CHOLERA.

Read in the Section on State Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY ELMER LEE, A.M., M.D., PH.B.
CHICAGO.

Asiatic cholera is one of the pestilential diseases that remains to menace the happiness and prosperity of the human race. In civilized countries epidemics are more and more rarely occurring, but cholera is still a dreaded and fatal disease in periodical epidemics of wide extent in civilized Europe. To-day the disease prevails almost continuously in some portion of southern Europe and western Asia. The people in these countries are of two notable classes; those of the highest, but the majority of the lowest intelligence. Superstitions offer obstacles that so far have prevented the development of prophylactic measures against ravages of epidemic cholera. When a people such as are the occupants of southern Russia, threaten to murder the priest of the parish because he endeavors to introduce, for their use in times of cholera, so simple an agent as carbolic acid, it is not strange that preventive measures make slow headway. The Russian populace during the last epidemic of the year 1892, actually murdered a physician in cold blood, simply because of his profession. They believed that he, with other members of the profession, was indirectly the cause of their suffering and death. Mobs attacked the hospital barracks, dragged the patients into the open places, laid them on their backs in the hot sun, destroyed the hospital, threatened the lives of doctors and nurses, and in one instance a doctor was martyred. In another instance, in order to save his life, at the hands of these sadly superstitious people, it was necessary to place a physician in a coffin and carry him as if dead to the outskirts of the town. Even in more enlightened portions of civilized countries, grave difficulties present themselves to important measures relative to protection of human life in times of epidemics.

It is a long time since there has been an epidemic of the cholera in the United States, but it is perhaps an open question whether our own people in some instances would behave in the most enlightened manner. While it is agreed by the profession universally, that it is desirable to prevent epidemics, it seems everywhere to be scarcely possible to meet the laudable desire. Up to the present time, there have been and there are a number of propositions concerning the prevention of Asiatic cholera. The success of measures of prevention has not realized the expectations of the advocate who has proposed them. A most notable and widespread interest and enthusiasm was produced ten years ago by Ferran, of Valencia, Spain. The Doctor heralded to the world that by the use of his attenuated cholera germs, the disease was both quickly and surely curable, as well as preventable. His proposition received almost universal consideration, but to-day the proposition receives absolutely universal neglect. This is the sad history of the great hope that was extended throughout the civilized world, that at last a great man had discovered a method equal to the require-

ment. Expectations ran high, the medical press, as well as the secular, was filled with seemingly strong and convincing facts that went far to establish the value of Dr. Ferran's proposition; but alas! as have so many propositions during our own brief generation, it waned and to-day is only remembered on account of the notoriety of the failure. Since his day, other equally intrepid investigators have had propositions to advance. Some of the propositions have been worthy of serious consideration, some of them have been ridiculous. In every instance the proposal to protect human life from the contagion of cholera has consisted of some foreign element to be introduced into the blood circulation. The principle underlying the introduction of foreign substances into the circulation is that of antagonism. Some of these substances proposed to be introduced into the body have been animal substances, many of them mineral. The disposition of the moment, especially the disposition of European investigators, is along the line of animal viruses. These viruses are of two kinds: the newer kind is the sterilized toxins of the disease to be prevented; the older form consisted of attenuated bacilli. Both forms have sadly failed to prevent the disease feared.

The latest proposer of a virus of animal nature that would prevent Asiatic cholera is Professor Haffkine, of the Pasteur Laboratory, a Russian by birth and education. The Doctor is an intrepid experimenter, a faithful observer, and a profound bacteriologist. His great and untiring efforts seriously deserve a better fate than the results of latest experiments warrant. Encouraged by the hope of success, he has visited the home of Asiatic cholera in India, and a great many of the natives and members of the native army, were inoculated against cholera. The report of the results of his inoculations, show that 70 per cent. of the inoculated subsequently contracted cholera, whereas the percentage of the natives not inoculated who contracted cholera did not exceed 67 per cent. This is truly disheartening, but it was what was to be expected. Inoculation by animal viruses predisposes to Asiatic cholera, the opposite result to that which is desired. Inoculation against cholera has signally failed in the hands of each successive prophet. The virus subcutaneously introduced produced retrograde metamorphoses similar to the effect of the disease itself. The experiments in Calcutta by inoculation during the past three years have shown better results, but the conclusion is valueless for the reason that that community has not been visited by Asiatic cholera during the entire period of the experiment. If the attenuated germ and the sterilized product of the germs, or the sterilized product of the disease itself, after the conscientious trial of a generation fails, what hope remains along this particular line? There is nothing left to be tried, and it appears to me the case is hopeless in this direction. My own conviction honestly revealed, denies any prospect of a realization of such hopes.

A still later earnest, intelligent, educated enthusiast in our own country comes forward with a new theory. Dr. Reginald Leach, a worthy and honored graduate of Dartmouth, proposes to prevent Asiatic cholera by a process of introducing arsenious acid into the circulation. His conclusion is the result of theoretical deduction. The proof of the value of the deductions has not yet been established, but the high standing of Dr. Leach entitles him to our most respectful consideration. He assumes, and in his assumption he has my concurrence, that to prevent a disease such as cholera, an agent is required which is in itself able to cure that disease. This is good reasoning; this is from my standpoint literally and actually true. Now, as to the selection of the remedy. The Doctor holds with me that the propositions of Pasteur, of Behring, Haffkine, Hammond, Ferran, and others of that class are faulty, because they use an animal toxin for their preventive measure. An animal toxin, the Doctor says, is necessarily uncertain in its dynamic force, owing to incidental and unavoidable causes. In addition to that, the morbid products of vicious character are liable to accompany the curative animal virus, owing to the impurity of the source from which it is to be taken. Consequently, Dr. Leach proposes to use a definite unvariable mineral of known strength, a mineral which can be weighed and the dose made exact. He reasons that there is some analogy between Asiatic cholera and malarial disorders, and that this mineral substance likewise is able to exert its peculiar protecting influence. Virchow has stated that there is some analogy between the effect of poisoning by arsenic and the disease, Asiatic cholera. Upon this basis of analogy, the theory is constructed in part, that that remedy which produces an analogic disease to cholera may be the remedy which will cure a prototype of that analogy. Another conclusion entertained is that while the morbid products of disease used as viruses for inoculation produce retrograde disturbances of the human body, on the contrary, arsenic is said by Bartholow, as the Doctor's authority, to produce tonic and reconstructive effects. Theoretically, this may or may not be true. Practically, the conclusion has not been determined. It is a serious question in my mind as to whether it ever can be proved to be true. The claims for prophylactic effect of arsenic are being investigated by certain colleagues in Lucknow and some other parts of India. Whatever may be the result, it is too much to hope that the prevention of Asiatic cholera can be secured by introducing any corrosive mineral substance into the circulation. Arsenic is an intense corrosive, and whatever its influence may be, its action is that of a foreign corrosive substance. It has by right and by nature no natural place in the human organism. The reasoning from the point of theory by Dr. Leach is clear and deeply interesting and worthy of consideration. The whole subject has been plainly presented to me by the Doctor in the form of a personal letter, but it is too important a document to be retained by me as a private paper. It is my wish that it be included in the Transactions of this Section for publication in the regular way.

The prevention of cholera must necessarily be along two lines: 1, the measures instituted and executed by the State: and 2, those means and measures to be carried out by the individual. The enforcement by the State of modern sanitation, modern hygiene, the principal feature of both the preceding, being a free supply of pure water for public and private use, constitute the wisest and the best provision as a public policy. The application of rules of strict and severe and unyielding quarantine measures is neither humane nor is it necessary.

Cholera is a preventable disease; but to prevent cholera requires coöperation between the directors

and the directed. Education and the growth of intelligence alone will secure protective coöperation. What can we do in a place where its citizens, when commanded by the authorities to restrict their use exclusively to sterilized water, reply as they did along the banks of the Volga in Russia, that they will not do so because God Almighty did not intend them to drink boiled water, for if he had he would have boiled the water himself. The day when sufficient intelligence will inspire the motive for coöperation between the authorities and the masses is somewhat nearer but still a long way off.

Personal prophylaxis against cholera would avail much if the result of personal intelligent instruction. Victims of cholera are chiefly persons who are themselves victims of vicious appetites or vicious habits. The excessive use of alcoholic beverages is without an equal as a chief factor in preparing the organism for an invasion of cholera. Excessive use of tobacco likewise weakens the system and invites cholera. Unscientific cooking and the too frequent use of animal foods are productive of a condition of body which encourages cholera. The insufficient consumption of water, and especially pure water, is of all factors the most conducive to the acquirement of this disease. One preventive which would be a universal prophylactic against Asiatic cholera is the condition not as frequently found as it should be, which is known by the name of good health. Pettenkofer, of Munich, showed by his experiments upon himself, that with normal secretion of gastric juice, a tumblerful of cholera bacilli could be taken with mirth and impunity. Gastric juice is a corrosive substance secreted in the normal stomach, that attacks and cuts to pieces quickly and surely, every organic particle of matter that comes in contact with it. It is fully taught and fully believed that cholera is produced by organic germs which enter the stomach through the mouth in the contaminated water which is drank, or in the food which is consumed. The sentinel, in good health is vigilant and absolutely prevents every form of organic substance from passing the threshold into the human citadel. But if the guard who stands watch at the door is stupefied and rendered impotent by his own vicious habits, he will permit the foe to enter, and the house to be invaded. Healthy tissue, together with a healthy mind, is the prophylaxis universal as to time and to place against every invasion of the system by Asiatic cholera.

It was my experience during a stay of six weeks in the Oboukoff Hospital in St. Petersburg, to see many cases of Asiatic cholera. There were 600 persons afflicted with cholera at the time of arrival. The cases of cholera were principally among the lower or lowest classes. These poor people live badly, eat poorly, and drink excessively; but instead of drinking pure water, they substitute a Russian liquor, and frequently while under its influence they drink water during the heat of the day from the filthy canals which divide the city into three parts. These canals are so foul that they resemble to some extent the Chicago River. Fish can scarcely be kept alive for even a few days in them. Very many of the men who came to the hospital sick from cholera, contracted the disease through their ignorant use of the contaminated water from the canals of the city. The preventive measure that is universally employed, and which commended itself because of its good results, was the provision for a supply of boiled water for all the inhabitants. It is wise in observing to take note of a measure so simple, yet so generally recommended as the use of pure water during epidemics. This sensible measure is the only likely preventative of Asiatic cholera. During the prevalence of the epidemic in Hamburg, Altoona, a division of the city, was supplied from a different system of waterworks, from that of Hamburg, and while cholera raged in Hamburg to the extent of 21,000 cases in five weeks, there were no cases of cholera in Altoona, which was only separated from Hamburg by the difference in having a separate waterworks which supplied filtered water as against unfiltered water to the residents of the infected city. Pure water will save Hamburg from future epidemics of cholera.

100 State Street.

LETTER FROM DR. LEACH.

PARIS, TEXAS, April 6, 1895.

Dr. Elmer Lee, 100 State Street, Chicago, Ill.,

My Dear Doctor:—Your very welcome favor of the 3d inst. came to hand but shortly, and I hasten to reply that against your very large practical experience with the disease, I can not pit my remedy (as yet but partially tested) as a curative; nor do I so wish to do, for I hastily acquiesce in the verity of your special plea for absolute cleanliness in the treatment of Asiatic cholera, and I also have my apology to offer for some unmeant abstruseness which seems to have slipped into my letter of the 29th ult., for I did not then, nor ever, mean to commend arsenious acid, nor any other form of arsenic, as anything else than the remedy, *par excellence*, as a prophylactic against this disease; believing, always, that with absolute cleanliness, followed by the judicious exhibition of the proper drug, this disease may be reduced to the status of, at least, that now held by the more loathsome variola or possibly to something even better still, for I am at least sufficiently enthused with the belief in arsenization vs. cholera to make any reasonable sacrifice for the pleasure of personally testing the alleged efficacy of my drug to prevent; but to date I have been handicapped by a succession of misfortunes which have wellnigh buried me in that oblivion it seems the desire of the majority to relegate us, and the misfortune of all such who are adventurous in medicine to that point where those who dare but follow pronounce each temerous.

I assure you, therefore, that I appreciate to the utmost, the honor of the attention you have thus far bestowed upon my hypothesis, and trust it may be my good fortune ere long to forward you some more convincing news from the East, of the efficiency of my chosen drug as a prophylactic against this fell destroyer of our fellow beings; meanwhile, I trust you will excuse me when I acknowledge a timidity in asserting views diametrically opposed to the generally accepted theories of the day as presented by Pasteur, Haffkine, Hammond, Behring and others, but at the same time accord me the privilege of the paradoxical position of apparent temerity in asserting my views on arsenization as the only true prophylaxis against cholera (as you have seen it) I believe logical reasoning can arrive at; and accredit me with the desire only to better our standing as preventers of disease, however attained.

As you say, my theory is clever and engaging, please do me the further honor of reading something more of the same which will more fully acquaint you with the wherefore I am so confident of its ultimate good to mankind; and then, if you please, reward me with your further correspondence upon this very intensely interesting subject.

Granting that you will continue to read to the end, I take great pleasure in stating that I find, in reading up on my opponents (inoculation of animal virus) that Toussaint and Chaveau first recognized the fact that not only the attenuated disease germs, but also the sterilized products of bacterial life, could communicate immunity, but Behring says the acquired immunity is of a relatively short duration and the dismal results of Haffkine at Lucknow show that he there lost over 70 per cent. of the inoculated, while there was a mortality of less that 67 per cent. among the uninoculated, showing a morbid condition we would wish to avoid in alleging prophylactic virtues of anything; therefore please note that while I shall attempt to show the fallacy and even dangers of other hypotheses on the prevention of Asiatic

cholera, I do not do so till I feel confident I have something logically correct as a substitute; and, therefore, not as an iconoclast but as a simple investigator do I propound my own theory to you as to all others, hoping only now to sufficiently interest those who may have the ear of public opinion, that tests may be made where such is possible, and the sooner the better, as the more certain of something tangible and reliable.

We know that Virchow first promulgated that "many cases of acute arsenical poisoning are not distinguishable by their symptomatology or morbid anatomy from cases of epidemic cholera;" that Farrington proclaims that arsenic "excites intestinal disease which is almost identical with cholera, even the organic growths of cholera are found in the discharges from the arsenic proving;" also that since 1873 sulphuric acid (as I wrote in my last) has held a high place among the alleged preventive measures against this form of cholera. Therefore in handling this much mooted question I ask your forbearance and a reservation of verdict until I have presented more testimony than I felt it my privilege in my letter of the 29th ult.; and in doing this you will please note I shall attempt to faithfully present all sides of the question; at the same time claiming most for arsenic as the preventive of the disease, as well as the superiority of drugs over all kinds of animal viruses as preventatives, because I am with you in my conviction that the whole principle now underlying allopathic practice is incorrect, and I say so though I am a graduate of Dartmouth College also that I do not now follow the precepts of my alma mater.

Though this may seem already long I have but just begun, yet shall try and not burden you with a novel method of cure, but only present a prophylactic measure as different from a curative as is hygiene from medicine, yet as allied in significance and utility. I follow the same general trend of thought as that of all our illustrious predecessors in preventive medicine (for there is but one royal road to success) but am constrained to choose a drug instead of their inoculation with the animal viruses or antitoxins, for I choose more measurable substance, which, in exhibition as a prophylactic against cholera, is within our power to control by regulating the dosage and within our ken in most probable effect; at the same time eliminating possible idiosyncrasies in persons of unusual susceptibility; but even in them prepared to meet any untoward symptoms with a known antidote such as we have not for the animal viruses.

I choose a drug because of the fact that extraneous noxious agencies (such as natural diseases and animal viruses) possess subordinate and often extremely conditional powers, while drugs possess absolute and unconditional powers far superior to the former in their ability to produce morbid discordancy or the antitype of the prominent, uncommon and characteristic signs and symptoms equal in number to the disease to be prevented which must be the power of any protective to protect. I choose arsenic, therefore, because, as Hippocrates says: "Experience has demonstrated that only that remedy will prevent a disease that possesses the power of curing the disease feared, and which can produce reaction in the system which is directly antagonistic to the disease and its influences." Though I do not claim that the inoculation process with the sterilized viruses will not cure the disease feared, I do assert that in a system that might otherwise demonstrate cholera, that inoculation with animal viruses can not produce reaction directly antagonistic to the disease and its influences, but on the contrary, with cholera, I claim that the inoculation process (contrary to the same process in smallpox) weakens and makes more susceptible to the influences of the natural disease each one inoculated, and by virtue of its similar powers of destructive metamorphosis to the action of the disease, epidemic cholera.

I choose arsenic, also, because long before the profession was dominated by the manufacturing chemist, arsenic was known to be one of the most potent remedial agents in combating this disease, and is even now quoted by Bartholow as "one of the numerous remedies proposed for the cure of this disease," and by others as "indicated in all stages of the disease; "and as it is tonic in effect and a reconstructive, both of which are diametrically opposed to the destructive metamorphosis at work in the cholera patient or him likely to become such. I choose my drug also because, as Wm. Henry Porter says: "The arsenites (that is the molecular elements which constitute the arsenites) are intensely irritating and poisonous to all forms of protoplasmic life, both animal and vegetable. At the same time they enhance the accumulation of tissue throughout the whole animal economy, and when this is done diseased processes all through the system are in part or completely removed and more or less of a new normal or healthy activity is brought to all parts of the body."

I choose arsenic, also, because authority and experience teach us that the human economy is more susceptible to drug action and the vital force more responsive to its magic touch than to any miasm or perversion of nature's laws; therefore, while I acknowledge that sterilized products of bacterial life might communicate a like immunity, accord me the privilege of stating that many may be the imperfect results of chemic action in this process rewarding us with such prognoses as awaited Haffkine at Lucknow and Lady Montague in England where, in either instance, the results were such as could not be predicted by the most gruesome pessimist of that time or of this; affecting as they did such monstrous mortalities that thanks to Jenner many were saved.

As Behring says of his antitoxin: "The acquired immunity is of a relatively short duration," so I assert of Haffkine's inoculation, and likewise acknowledge a probable short immunity from arsenization, for I accept authority for the statement that "the effects of arsenic continue in the system from a few hours to four weeks, or longer, according to the size and frequency of the dose," yet while the effects of inoculation are not known positively they are of arsenic, and so far as yet demonstrated the results show for the former more of destruction than protection, while for arsenic more for protection and none for destruction. In this, I take no account of the 200 cases reported by Simpson from Calcutta, where there had been no danger of infection for over three years previous to his inoculations. Such misleading reports can have no effect, pro or con, upon the actual prevention of this disease, and their publication as made in American newspapers and medical journals is simply wrong, to say the least; for a prophylactic to command the courtesy of the name must protect a majority of those alleged to be protected, and only where disease and danger to infection is active and imminent and not in situations where it may have existed in the past but has not since reappeared.

In such times as these, therefore, when we are seeking after the true preventive for each preventible disease, with a loyal but misguided enthusiast in the Orient sending to our Western civilization only the immediate results of a most pernicious though seemingly very plausible theory, we can and do realize and recognize the sacrifices of the investigator into the occultness of disease, more especially this of epidemic cholera, yet only to the successful discoverer of that protective which will protect all, be that what it may, can we honestly render our respectful acknowledgments. To return to the why and the wherefore of the proposed substitution of arsenic for all others as a preventive of cholera we recall the facts relative to cases of supposed cholera at Cincinnati in September, 1892, and of similar cases at Little Rock in the following month, wherein the auxiliary diagnosticians of the microscope and chemic analysis were required; and in the first instance showed similar though not identical germ life to Asiatic cholera in the milk drunk by those victims, while in the second instance chemic analysis demonstrated arsenical poisoning at Helena while the microscope showed the Little Rock cases to be those of so-called winter cholera. In all exemplifying bacteriology the acme of diagnosticians is germ diseases (after the germs are admitted) and Asiatic cholera and arsenic poisoning are, as Virchow so aptly states, indistinguishable (oftentimes) by their symptomatology and morbid anatomy from each other (except, as stated,) by the auxiliaries here noted.

If these be facts, and I believe all know them as such, then truly a drug is eminently superior to any animal virus or if there can possibly be a better process than the one of Haffkine or Ferran (with the excreta of the cholera patient, sterilized or not) why not a drug which we have known in effect for the past century, instead of risking a repetition of our certainty to infection with the disease feared, as well as some possible worse disease. Experience has shown recently in India that there is more danger to the inoculated than to those where no precaution against infection was made, and remembering the results of inoculation from 1721 to 1783, and that the process of sterilizing can be unsuccessful at times (the cause of Haffkine's late failures) then why place ourselves and patients in the unfortunate position of Lady Montague and her enthusiastic collaborators, when they produced (of course unintentionally), a condition which may best be described by that trite old simile of the early English and known as: "the groans of the Britons," in which they are made to say: "The barbarians on the one hand drive us into the sea; the sea, on the other, throws us back upon the

barbarians; and we have only the hard choice left us of perishing by the sword or by the waves."

If this appears far-fetched, my dear Doctor, look at the results in Haffkine's Lucknow inoculations in which it was supposed the sterilization of the virus there used was faulty, and if such was the case there, it is but fair to presume that in any of the "hair splitting" processes of eliminating individual or family characteristics or diseases from the excreta of the cholera patients, we may never have a truly sterilized immunizing virus containing only the comma germs and their toxic results or combinations. For example, let us look upon an imaginary threatened epidemic of the disease and in the following personal manner, wherein you will imagine yourself in imminent danger to infection because your nearest neighbor has the disease. You each use the same well for obtaining your supply of drinking water and your families exchange the ordinary courtesies of such relationship; but you know him or at least suspect him the domicile of syphilis, scrofula or tuberculosis. This is the only case thus far, and inoculation as now promulgated, the only preventive measure known to the profession.

If Scylla and Charybdis presented such fearful obstacles to the usually undaunted ancients, which of these seems the more favorable to you? the Scylla of the hardened syphilitic or the possible swirling, twisting and contorting Charybdis of Asiatic cholera? for in this, maybe a little overdrawn simile, you see inoculation against cholera as it might exist and the consequent predicament of our people. This is in fact the only view to take of inoculation as it exists, as shown by the grievous experience of our colleague in India; yet, despite all this, we find the leaders of preventive medicine of to-day forgetful of the near past, and the wave of a more certain and accessible prophylactic which is offered in arsenization, of which I had the pleasure in my letter of the 29th ult., of reporting so much of what is good and none of a like character to the inoculations of my unfortunate colleague.

If, then, Pasteur prevents hydrophobia with a virus which presents symptoms in the inoculated almost identical with the rabies canina, and Jenner's vaccine may, and sometimes does, exhibit such a similarity to true smallpox as to question the purity of the virus, and it be a fact, as Virchow says, that arsenic produces a condition which may preclude a positive differential diagnosis with cholera to produce this effect, then the arsenious acid must actually occupy the exact space or place in the animal economy or affect the intestinal pabulum in a like manner (as I think I wrote you before) as would true Asiatic cholera, (and it matters not which is the solution) to there demonstrate its certain effect. Therefore, by the willful arsenization of men up to a condition of slight physiologic effect of the remedy, such, for instance, as is produced by the animal virus, this process must and will effectually prevent that one so treated simultaneously demonstrating in himself the disease feared, and just as surely, and upon exactly the same hypothesis that we presume and logically conclude that the vaccinated can not suffer simultaneously the full virulence of variola; yet in this we need not be more void of common sense in our expectations of arsenization than of vaccination (already sufficiently tested to satisfy a big majority) as facts simply verify, in the latter, that personal idiosyncrasy in the well is quite a factor in the equation, and that such affects its prognosed results as in the administration of different remedials to the sick. Therefore not every one arsenicized, more than every one vaccinated, will be protected against disease more than is to be expected of otherwise positively indicated remedies prescribed, as they all are, according to our fallible diagnostic powers and prognosing hopes.

These, then, are some of my reasons for promulgating what Gibier so aptly pronounces my "theoretically perfect" hypothesis, and the reason for my choice of a drug in preference to any animal virus. Because I believe that through a drug alone, exhibited into the system and that system made responsive to its physiologic effect, and so kept while danger lasts, may we be protected, and finally emancipated from the ravages of epidemic or Asiatic cholera. By this method alone may we hope for relief from the pernicious theory of inoculation advocated by the gentlemen referred to; and by drug effect alone may we hope to keep off indefinitely the possible dangers far worse than the probable epidemic disease; and by drug effect alone practice truly aseptic prophylaxis against this disease.

If, then, the sterilized products may become dangerous through some unknown cause, why should we advocate further a process which, at best, can but effect an equal immunity with arsenious acid which latter is long known as to effect, where positive antidotes are the public property of all inquiring minds and named in all medical works pertaining to the subject of arsenic and its compounds. Why, then, inoculate at all, while the alleged acquired immunity is of so relatively short duration, and while a more certain and safer effect may be had by arsenicizing, which demonstrates truly one more long known fact that two diseases, though different in kind (drug and miasm) but very similar in their manifestations of signs and symptoms will always extinguish each other, whenever they meet in the system, for the superadded morbific potency (drug) takes possession chiefly of the same parts in the organism heretofore affected (or hereafter to be affected) by the weaker morbific agency (disease). This is thereby deprived of its power of action and is consequently extinguished or prevented.

In arsenization we therefore have a safe, sure and accessible prophylactic; for such a process must demonstrate true asepsis and the power to produce a like condition to that intended to prevent, as well as a condition directly antagonistic to the disease and its influences. All of which Bartholow unconsciously affirms when he says: "Arsenic is, with but a few exceptions, destructive to animal and vegetable germ life and is a reconstructive and a tonic to the system, yet in lethal doses produces symptoms similar to epidemic cholera." To all this I add that I note with pleasure that you agree with me that Haffkine's inoculation theory, like Ferran's, must fail under test, but what must also be the verdict of all others in the case of inoculation as practiced, filled as it must be necessarily with provisional possibilities of other and worse diseases than Asiatic cholera. What of this inoculation process in comparison with arsenization which must not only protect the inoculated or arsenicized, but also protect all coming into his presence, as well as those who, by virtue of their environment, might ingest particles of his ejects? In the arcenicized is one less germinating center and one less germinating medium for the rapid incubation and dissemination of the comma bacillus and its toxins, thus sterilized beyond any possibility of a doubt and the result unaccompanied by any wail of possible failure in the process, such as came from India after the demonstration of such a fearful mortality.

Therefore, if we are to have protection against cholera through a process yclept vaccination or inoculation (as predicted by von Pettenkofer), and none can be more efficacious or expeditious, it can be done in but the one way, and that is by arsenization of each and every suspect or patient (in the first stage), or person subjected to possible infection, as well as to all others seeking protection, and this should be repeated after four weeks at the longest if danger to infection remain. So by arsenicizing with ivory points charged with doses of the one-thirtieth of a grain of pure arsenious acid (such as are made at the Lancaster County Vaccine Farms), each one thus brought under the sufficient effect of the remedy may experience a successions of symptoms resembling an attack of cholera in miniature, yet with few, if any, of the distressing symptoms usually incident to true cholera. At most, there will be but slight diarrhea, with burning at the epigastrium and under the eyelids, and a ringing and roaring in the ears, as is common after dysentery, diarrhea, or profuse fluxes of any sort; but in inoculation with the offal of the cholera patient most of these symptoms are more pronounced in that each must, perforce, suffer a mild and sometimes even a virulent attack of the actual disease. Under slight physiologic effect of arsenic, one has but taken a dose and acquired its effects, such as has been common practice (in prescriptions during the past century) for chronic malarial cachexia and skin diseases of a germ origin, and is still an almost diurnal prescription for such maladies with the "regular" doctors.

Such constitutional effect of the drug may be produced when there is no especially imminent danger to infection, by the ingestion of from 2 to 5 drop doses of Fowler's solution, repeated every two hours till the desired effect is acquired; or the same may be effected by hypodermic administrations in like dosage and repeated until like effect is acquired; but all this, like successful vaccinations, should be done only under the prescription and immediate supervision of the physician, who holds ever ready, in dialyzed iron, an antidote to any possible idiosyncrasy in the applicant; and such none may possess against the inoculations with any degree of certainty of action; for once inoculated or ingested, the cholera germ or miasm takes its own course, and often the life of him experimented upon.

From some comes the common wail of fear for those thus arsenicized, but to all I respectfully request a comparison of the mortality at Berlin alone, before and after the intro-

duction of vaccination, yet this process of protection counts some victims. Compare the mortality from cholera and from Haffkine's inoculation and that from arsenic poisoning (in the hands of the physician when purposely prescribed); compare also the possible dangers incident to inoculation (even to those who survive the process) to the process of arsenization as I propose it, and of all these choose the lesser evil, if evil it be to try and avoid disease; compare the actual increased mortality from inoculation against that where it was not practiced at all and therein alone see the fallacy of a theory in relation to the practice of which we speak; and then remember that inoculation calls for a first case, with all its possible accompanying dyscrasiæ, its entire lack of effective antidotes and its frequent mortality. While arsenization calls for the ingestion or other manner of acquiring a slight physiologic effect of arsenious acid (a drug in daily use the whole world over), and that in this process there need be no first case from which to obtain the virus, for this drug is known to all medical men, who know its effects and its antidotes, while few know cholera and its effects, and fewer know its antidotes.

Let me, therefore, my dear Doctor, review your favor of the 3d inst., and remind you first that where you find the consensus of opinion to have been against good results from the use of drugs during the epidemic in Europe in 1892, that I believe you have only been able to hear fro m one side of the profession, and that side used much too large doses, thereby augmenting the diseased condition by adding drug disease, whereas by the judicious administration of much reduced doses you would have probably come out of that epidemic much more in favor of continuing the good old-fashioned drug medication. I am also truly pleased to find one more who shall acknowledge, with you, that "adding to an already overburdened and disordered blood new and additional foreign and disturbing substances is the principle underlying allopathy, but it is not the correct principle involved in curing disease." I would respectfully cite you to one Professor Brunton (medical author, editor and examiner), who acknowledges a like empiricism in the allopathic practice, which is claimed to be the only scientific process of medicating our fellows; and as above stated I am pleased to add that I am one with you in encouraging absolute cleanliness in the cholera patient. But do not forget that drugs will do much more than the majority of practitioners. I now respectfully and forcefully present my allegations in detail and shall appreciate much your further consideration of this most interesting subject, especially as I can see that through your disinterested interest you further promulgate this hypothesis, which is thus far "incontrovertible except by test," and which has thus far stood firmly against all adversities.

I conjure you, my dear Doctor, to write of this subject while you have the ear of the entire profession, as I am but yet little known; also do me the honor of an early answer and your candid opinion as to the theory as thus far propounded, and believe me, Yours very truly,

REG. LEACH.

THE PROPRIETARY SYSTEM AND ITS REMEDY.

Read in the Section on State Medicine at the Forty-sixth Annual Meeting of the American Medical Association, held at Baltimore, Md., May 7–10, 1895.

BY F. E. STEWART, M.D., PH. G.

DETROIT, MICH.

THE PROPRIETARY SYSTEM.

For the purpose of promoting progress in science and the useful arts the Constitution of the United States gives Congress the power to grant to authors and inventors for limited times the exclusive use of their respective writings and discoveries. Hence our copyright and patent laws.

A patent is a contract between the government, representing the public at large, and the inventor. The consideration moving from the government is the granting of the exclusive use of the invention for a limited time. The consideration moving from the inventor is the invention of a new and useful article, and the giving to the public full knowledge of it by a proper application for a patent, so that, when the patent expires, the public may manufacture the invention. The wisdom of such a law seems apparent, for by it inventors are stimulated to produce new and useful articles, capital is protected during the working and marketing of the invention until the investment becomes remunerative, knowledge is increased, and the archives of the Patent Office become a great public library and industrial exhibit, free to the use of the public, and commerce is promoted by valuable additions to the list of marketable commodies.

A trade-mark is a "commercial signature" employed to distinguish one brand of an article from another brand of the same article on the market. Its use does not confer on the user any exclusive right to the manufacture and sale of the article upon which the trade-mark is branded. In law, the trade-mark has two uses. One is to designate ownership, illustrated by the common method of branding horses and cattle so often seen on the ranches of the great West. Another use is to designate the source of emanation or of manufacture. For this reason the lumberman brands his logs with a trade-mark, or the manufacturer of pottery stamps his wares with peculiar marks or signs. In the same way the manufacturers of silk, linen and other fabrics use the words "Lyon," "York Mills," etc., as trade-marks, to distinguish their various brands of goods from other brands of the same articles on the market. But these uses of the trade-mark do not vest in the users the right to the exclusive handling, or manufacture and sale of the articles upon which the trade-marks are branded. The man who brands his cattle with a trade-mark does not acquire thereby a monopoly in cattle; neither does the use of trade-marks by potteries, silk manufacturers, makers of linen and other fabrics, vest in the users the right to exclude others from making and selling the same commodities.

Another use of the trade-mark has sprung into being as a development of modern times—a use not contemplated by law. The method to which I refer is the registering at the Patent Office of the only name by which an article is known, as a trade-mark on said article. This use of the trade-mark has created what is known as the proprietary system. This system should not be confounded with the patent system, as it is, in principle and practice, directly opposed to it, as a further consideration of the subject will show.

The monopoly created by registering the only name by which an article is known as a trade-mark upon such article is unconstitutional, illegal and unscientific. These charges I now proceed to prove.

The monopoly is unconstitutional because unlimited in nature. *Congress has no power to grant perpetual monopolies.* I grant that the right to use a trade-mark can not be limited by law. But, as I said before, when one puts his commercial signature on his goods he acquires thereby no exclusive right to the manufacture and sale of articles so marked. No monopoly whatever can result from the *proper use* of a trade-mark. Only its misuse or abuse creates the so-called proprietary system.

The monopoly is illegal, for there is no law in the statute books of the United States designed to protect the new use of the trade-mark. On the contrary, the courts have decided that when a new article of commerce is born it must be provided with a name; and that any one has a perfect right to manufacture and sell the article under the name by which it is

known to the public provided the article is not patented.[1] In case the article is patented no one has a right to make and sell it under that name or any other name until the patent expires. Furthermore, the name, by use becomes descriptive. A name is descriptive if commonly used by the public in designating the article when purchasing it.[2] And it is an axiom of law that a descriptive name can not be a trade-mark. An absurdity that might occur by misusing a trade-mark in this way illustrates the subject very well. The trade-mark law permits the employment of the same trade-mark as many times as there are classes of articles. The word "Lyon," for example, can legally be used as a trade-mark on logs, silk or tin-plate. In the same manner the word "Lactopeptine" may be branded on a cow with just as much propriety as upon a medicine. The very impossibility of such a thing occurring demonstrates most clearly the name lactopeptine is not a trade-mark when applied to the well-known article so-called, but its proper or descriptive appellation, the present manufacturer to the contrary notwithstanding.

The monopoly is unscientific because it is protective of secrecy. While in many instances the ingredients of proprietary medicines advertised to the medical profession are given, their true, or working formulas, whereby the public (pharmacist) may manufacture them are rarely published. The disadvantage of this to pharmacy must be apparent to any thoughtful mind. Pharmacy is the *science* of preparing medicine. Therapy is the science of applying medicine to the cure of disease. Materia medica is the name given to the collection of substances used as medicine. These three were formerly classed under the general term pharmacology, or the science of drugs. Pharmacy, then, is a branch of medical science, and should be represented in scientific medical literature alongside of therapeutics and materia medica, as a part of that science. But the proprietary system stands directly in the way of it. How can pharmacy have its place in medical science when the knowledge of it is locked up in trade secrecy? How can we have a scientific nomenclature to pharmacy when many of the new medicinal compounds are introduced under "proprietary" names which can have no place in science? The proprietary system more than any one thing prevents pharmacy being recognized as a science, and its practice as a profession.

Finally, the patent law was designed to promote progress in science and the useful arts by encouraging inventors to invent new and useful things, and to "publish full knowledge thereof whereby the public may manufacture the invention when the patent expires." The proprietary system, on the contrary, hinders progress in science and the useful arts by putting in its place a system of secrecy and perpetual monopoly. Many physicians object to the open limited monopoly of the patent law as injurious to the welfare of sick humanity. Are we to indorse the proprietary system which is far worse, both in principle and practice?

THE REMEDY.

The main objections to the proprietary system are its secrecy, the unlimited duration of the monopoly, and the unscientific nature of its nomenclature. The great thing in its favor is that it protects the investment of capital better than the patent law. Very few manufacturers with whom I am acquainted would object to a reasonable time limit being set on the monopoly. All manufacturers would agree to the adoption of a scientific nomenclature as far as I know. But there are very few who would care to throw their processes open to unrestricted competition. And it seems hardly fair to ask it. Yet, unless some kind of compromise is adopted between what might be called equity and expediency, the objections I have named remain in force.

Nothing can be done in this struggle with wealthy nostrum proprietors, unless the legitimate manufacturing interests will coöperate with the medical profession. Therefore, the establishment of some basis of coöperation is essential to success. Secrecy of composition is incompatible with scientific prescribing and should be prohibited; there is no special objection to allowing processes and methods of manipulation to come under the patent or copyright laws.

Now, I have a compromise to suggest which, it seems to me, would overcome the difficulty. In my trip across the continent with a large party of medical men for the purpose of attending the annual meeting of the AMERICAN MEDICAL ASSOCIATION held in San Francisco, I suggested the plan to various prominent physicians, who, in the main, agreed in regard to its desirability. It is to *permit* an inventor of a new and useful medical compound to retain the name and secret of manufacture of his invention for a limited time, provided the true working formula thereof be placed in the hands of a national committee of physicians and pharmacists, and the article marketed only under the sanction of the committee. In other words, let the system remain as it now is, only with the exceptions that a censorship shall be exercised over the market by a committee of competent physicians and pharmacists, the monopoly to be limited in time, and the system to be made scientific by providing it with a proper nomenclature and by the final publication of every invention whereby all pharmacists may manufacture the same when the patents expire.

I use the term *permit* advisedly. The present position of the trade is in every respect one of assumption, not permission. Pharmacy can never rank as a profession until the proprietary system is abolished, or some compromise of the kind I have suggested be adopted. Either point once gained then it is time for the medical journals to recognize pharmacy as a profession and invite the pharmacist to contribute the results of his researches to the medical journals. Pharmacy now only appears in the advertising pages of the medical journals, which are torn up when the journals are bound. Under such a system there is danger of the pharmacy of the nineteenth century becoming to a great extent a lost art for want of a literature. There are pharmacists who are taking the position I have mentioned now, and they should be admitted as members of county medical societies as honorary members, or active, if they take the medical degree.

Then let every manufacturing house open a scientific department manned by competent physicians and pharmacists, who can be held responsible to the profession for their utterances, and for the representations made by respective houses in labels, in circulars, in advertisements, and in the contributions of these houses to scientific literature. It would be

[1] Brown on Trade-marks.
[2] Ibid.

well if the members of these scientific departments were graduates in medicine as well as in pharmacy. They could then join the AMERICAN MEDICAL ASSOCIATION, become members of the section on materia medica and pharmacy, and contribute to the scientific proceedings, thus promoting the interests of both pharmacy and therapeutics.

At the present time there are quite a number of medical journals pretending to be independent, but really organs of various manufacturing houses. I can see no reason against, and much in favor of a manufacturing house issuing a journal as its organ; but I have nothing but condemnation for the pretender who sails under false colors as a purely scientific journal. Such a journal as *Squibb's Ephemeris*, for example, issued above board as the organ of Squibb's manufacturing establishment, but filled with scientific articles, the work of investigators in his laboratory, or elsewhere, is a valuable addition to our list of journals.

The question of the day at the recent meeting of the AMERICAN MEDICAL ASSOCIATION at San Francisco was, shall the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION advertise proprietary medicines? I would have the JOURNAL draw the line and admit only those whose true formulas are placed in the hands of a committee and under the restrictions I suggest. However, it must be agreed that such indorsement must not be construed as a recommendation and used for advertising purposes. And I would add another restriction, and that is, do not advertise any proprietary medicines which are advertised to the public in the newspapers.

Now, as to the complexion of the committee, I would suggest that it consist of one member each of the AMERICAN MEDICAL and American Pharmaceutical Associations, and one member each from the medical departments of the Army, Navy and Marine-Hospital service, to which might be appropriately added as chairman, the Commissioner or Secretary of Public Health, if such an office is finally created by Congress.

DOES ALCOHOL EVER ACT AS FOOD, OR AS A GENERATOR OF ANY NATURAL FORCE IN THE LIVING BODY?

Read in the Section on State Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, held at Baltimore, Md., May 7-10, 1895.

BY N. S. DAVIS, M.D.

CHICAGO, ILL.

Ever since Baron Liebig, of Germany, laid the foundations of organic chemistry by his two essays read before the British Medical Association—one on "Chemistry in its Application to Agriculture and Physiology" in 1840, and the other on "Animal Chemistry as Applied to Physiology and Pathology" in 1842, the assumption that the nitrogenous elements of food were appropriated to the growth and repair of the organized structures of the body and non-nitrogenous elements underwent oxidation or combustion, generating heat, has been accepted and incorporated into all our literature, both professional and non-professional. Consequently, the non-nitrogenous proximate elements of our food have been and still are almost universally regarded as fuel for supposed combustion or *respiratory food*, and not as furnishing material for the growth and repair of organized tissues. This arrangement of food elements into two classes by Liebig and his followers was founded on no experimental proof, but rested solely on the analogies of composition. The starch, sugar, gum, cellulose, etc., being composed of the three primary elements, carbon, hydrogen and oxygen, and capable of uniting with additional oxygen outside of the living body constituting combustion, it was assumed that the same union with more oxygen took place in the living body and thereby evolved the heat characteristic of the animal.

As all this class of proximate food elements was composed of carbon united with hydrogen and oxygen in proportion to form water they were called carbohydrates. And as alcohol in its elemental composition was strictly analogous it was unhesitatingly placed at the head of the list of carbohydrates or heat producing foods. I found so much difficulty in reconciling many facts connected with the diet of different individuals and communities with this theory that as early as 1850 I instituted a series of direct experiments for determining the actual influence of both the carbohydrates and nitrogenous elements of food on the processes of heat production and tissue repair. The results of these experiments were embodied in a paper that I read before the AMERICAN MEDICAL ASSOCIATION at its annual meeting in Charleston, S. C., 1851, and were such as convinced me that both carbonaceous and nitrogenous elements of our food furnished materials for tissue growth and repair; and that the animal heat was the result of molecular changes constantly taking place in the tissues; while the presence of alcohol neither promoted tissue repair nor heat evolution, but retarded both.

Böcker, of Germany, had previously demonstrated experimentally that the presence of alcohol in the living body diminishes the sum total of eliminations and excretions and therefore retarded the molecular or metabolic changes in the tissues. These results were verified by further experimental researches by Dr. W. A. Hammond and several others, as set forth in his work on hygiene published in 1863. It is worthy of note that all these early investigators as well as those of more recent date, found that the alcohol, instead of undergoing digestive changes in the stomach like starch, sugar and other carbohydrates, was rapidly absorbed into the blood and with it permeated all the tissues and reappeared more or less in the excretions, while the products of combustion, *i.e.*, carbonic acid and heat, were both diminished. It became evident, therefore, that it could not be longer regarded a respiratory or heat producing food. But the fact that its presence uniformly retarded tissue metamorphosis and lessened the products of waste, having been well established, it was at once assumed that such retardation of tissue waste was equivalent to the same amount of actual nutrition, and therefore the alcohol must be regarded as *indirect food*.

This view was adopted by Dr. Hammond, who asserted that if the presence of a moderate amount of alcohol in the blood lessened the amount of waste products to the extent of four or six ounces in twenty-four hours, it rendered that much less food necessary, and hence he placed it with several other subtances, in a distinct class of *indirect foods*. He was led by his own experiments to acknowledge that both the nitrogenous and non-nitrogenous or carbohydrate elements of our food were capable of entering more

or less into the formation of tissue and both capable of heat production; a position still more fully sustained by Dr. F. W. Pavy in his recent work on the "Physiology of the Carbohydrates."

The theory so plausibly advocated by Dr. Hammond that alcohol by retarding the molecular or katabolic changes in living tissues, actually became indirect or accessory food, rapidly acquired wide popularity and caused both medical and magazine writers to designate it the "savings-bank" or the "conservator" of the tissues, and gave a marked impetus to its use in the treatment of all diseases characterized by predominance of waste over that of nutrition. And though Dr. Hammond and all the more reliable experimenters agree that the presence of alcohol diminishes the animal temperature, many others still assert that it is mainly oxidized or "burnt up in the system," and that it "is a conservator of tissue, a generator of vital force, and may therefore be considered as food." (See Essay on the "Physiological Actions of Alcohol," by Dr. D. Cerna.)

Considering the very large amount of alcohol consumed by the people in the form of fermented and distilled liquors, the question whether it is capable of ever acting in the living body as food, either direct or indirect, or of generating vital force, is one of the greatest importance in its relations, both to the public health and to its therapeutic value as a medicine.

That alcohol undergoes no digestive or molecular change in the stomach, but is rapidly absorbed and mixed with the blood, has been demonstrated so completely that it does not need further discussion. That, while in the blood it does not furnish any material for either the growth or repair of any of the organized tissues, and consequently does not act as direct tissue food, is conceded with equal unanimity. That it does not act as respiratory or heat producing food, by uniting with oxygen or being "burned up" in the blood or tissues is proved by: 1, the fact that the temperature of the body diminishes in direct proportion to the quantity used until life ceases at a temperature from 5 to 10 degrees below the natural standard of health; 2, the fact that no investigator has been able to find any increase of the well-known products of its oxidation, namely, either aldehyde, carbonic acid, or acetic acid, although diligently sought for; and 3, the fact that it displays a much stronger affinity or attraction for the hemoglobin, albumin and water of the blood and tissues than for oxygen at the temperature of the living body. If it be thus conceded that the alcohol does not act in the living body as either direct tissue or respiratory food, does its known power to retard or lessen the ordinary katabolic processes, justify the inference tnat such retardation is in any physiologic sense equivalent to the same amount of nutrition, and that it is therefore an *indirect food?* In other words, is retarding katabolism or tissue disintegration, physiologically equivalent to the same amount of anabolism or tissue building? If it is, any person ought to be able to live well on notably less ordinary food by taking regularly a given quantity of alcohol, opium, tobacco, or any other agent capable of retarding the tissue waste, and yet be able to do the same amount of work, mental and physical. But the abundant facts of human experience in every climate,in every relation of human life, and every kind of occupation, deny the truth of the supposition. Again, if retardation of waste was in any proper sense equivalent to nutrition, an individual ought to be able to live much longer on nothing but diluted alcohol, as in fermented and distilled liquors, than he could on pure water alone. But while we have quite a number of examples of men living on nothing but water forty or fifty days, I have never seen or learned of a well authenticated case of a man taking, or receiving into his system, nothing but diluted alcohol for half of that length of time, without becoming sick with either gastro-duodenitis, nephritis or delirium tremens.

It is not necessary, however, to appeal to the facts of human experience in determining the question before us. A careful study of the conditions and processes necessary for both tissue building or nutrition, and tissue waste or disintegration in all the higher orders of animals, will show that neither process can be materially retarded without retarding or preventing the other. Both processes take place only in bioplasm or vitalized matter supplied with oxygen, water and heat. Neither the assimilation of new material, food, nor its use in tissue building can be effected without the presence of free oxygen and nuclein or corpuscular elements of the blood. And without the presence of the same elements we can have no natural tissue disintegration and removal of the waste. The processes of tissue building and tissue disintegration are, therefore, so intimately related and dependent upon the same materials and forces that neither can be either hastened or retarded from day to day without influencing the other. When alcohol or any other substance, introduced into the blood, retards the tissue waste, as shown by the diminished amount of excretory products, it must do so by either diminishing the amount of free oxygen in the blood; by impairing the vasomotor and trophic nerve functions; or by direct impairment of the properties of the nuclein or protagon elements of the blood and tissues.

The popular idea, both in and out of the profession, is, that the alcohol by further oxidation in the blood lessens the amount of oxygen to act on the tissues, and generates heat or "some kind of force." Those who advocate this theory of saving the tissues by combining the oxygen with alcohol, seem to forget that in doing so they are diverting and using up the only agent—oxygen—capable of combining with, and promoting the elimination of all natural waste products as well as the various toxic elements causing disease. But the theory that alcohol directly combines with the oxygen of the blood by which it would be converted into carbonic acid and water with evolution of heat, is completely refuted by the well-known fact that its presence in the blood diminishes both temperature and elimination of carbonic acid as already stated. Physiologists of the present day very generally agree, that the capacity of the blood to receive oxygen from the alveoli of the lungs, and convey it to the systemic capillaries and various tissues, depends chiefly on its hemoglobin, protein or albuminous and saline elements.

Both experimental and clinical facts in abundance show that alcohol at all ordinary temperatures displays a much stronger affinity for these elements of the blood and tissues than it does for oxygen. And when present in the blood, it rapidly attracts both water and hemoglobin from the corpuscular and albuminous elements of that fluid, and thereby diminishes its reception and distribution of oxygen. We are thus enabled to see clearly how the alcohol

diminishes the oxygenation and decarbonization of the blood and retards all metabolic changes both of nutrition and waste without itself undergoing oxidation with evolution of heat. Consequently, instead of acting as a shield or conservator of the tissues by simply combining with the oxygen, the alcohol directly impairs the properties and functions of the most highly vitalized elements of the blood itself, and thereby not only retards tissue waste but also retards the highest grades of nutrition and favors only sclerotic, fatty and molecular degenerations as we see everywhere resulting from its continued use.

Can an agent displaying such properties and effects be called *food*, either direct or indirect, without a total disregard for the proper meaning of words? And if not, can it act as a generator of vital or any other natural force in the living body?

The recognized physiologic forces belonging to the human body are, vital force, heat force, muscular force and nerve force. Vital force is that property of bioplasm or vitalized proteid matter, that is manifested in such molecular or metabolic changes as constitute nutrition, secretion and excretion, or growth and decay. Consequently the best test or measure of the *vital force* in any body, is the degree of activity of its metabolism; and yet it has already been shown that one of the most marked effects of the presence of alcohol, is the diminution of this same metabolism, and with it a loss of heat also. That it does not generate or increase muscular force or contractility, but the reverse in a marked degree has become so well known, that entire abstinence from its use has become an imperative rule in *all* intelligent training for exhibitions of the greatest muscular strength and endurance. Nerve force is manifested in two ways, namely, sensory, or acuteness of sensibility, and conducting or transmitting. That alcohol diminishes both these functions of nerve structure in direct proportion to the quantity present in the system, has been demonstrated by its use as an anesthetic, and by the application of instruments for the actual measurement of the acuteness of sensibility and the rate of transmission, under the influence of doses varying from 4 c. c. to 100 c. c. From the foregoing review it will be seen that alcohol when present in the system positively diminishes vital force as measured by molecular or metabolic activity, reduces temperature, lessens muscular force, and impairs nerve force both transmitting and sensory, in direct proportion to the quantity used. And yet, simply because a large part of the alcohol taken has not been actually reproduced in the excretions and eliminations, a large proportion of writers continue to assert that it "must, therefore, be oxidized in the body, thus serving the purpose of a food and in this manner generating *force*."

The same writers when asked what kind of *force* is generated, quote Dupré as having "shown that 1 gram of alcohol oxidized in the organism yields 7,184 heat units, while the same weight of lean beef evolves only 1,482 heat units." And therefore "two ounces of alcohol generate *a force* equal to that generated by a little over nine ounces of lean beef;" thereby leaving us to infer that heat is the force generated. And still the stubborn facts of both experiments and daily observations, show that nine ounces of beef a day maintains a man's temperature and other forces quite well, while on two ounces of alcohol per day his temperature diminishes together with every other known physiologic force manifested in the living body. And if it continues to be used daily for a number of years, instead of "conserving," it results in molecular degeneration in almost every tissue of the body, as seen in all cases of chronic alcoholism.

But why so persistently assume that the alcohol *must* be oxidized in the system, when it is fully demonstrated that it displays a much greater affinity for the water, albumin, hemoglobin, and nuclein of the blood and tissues than it does for the oxygen? Is it not quite possible that it is held in molecular or atomic combination with the protein elements named? And is not such a supposition much more in harmony with all the facts belonging to the subject?

Certain it is, that in its origin and its effects on the functions and structures of the living body, it is wholly unlike every other substance recognized as food. Instead of being a natural product of either vegetable or animal growth, alcohol is the well-known active toxic product of bacteriologic culture, neither digestible nor capable of assimilation, but pervading readily all parts of the system, and producing effects closely analogous to those produced by ether and chloroform, and usable for the same purposes. Then why longer delude the public and aid in deteriorating the public health, by calling it either a food or a generator of some kind of imaginary force?

PERITONEAL SUPPORTS—(LIGAMENTUM PERITONEI).

BY BYRON ROBINSON.

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(*Continued from page 418.*)

The lesser bag extends in young subjects from the cardiac end of the stomach to the pelvis and from the transverse fissure of the liver to the spleen. Beside this wide extension of the sac does not long remain. The cavity begins to loose its completeness at the lateral circumference during childhood. Coalescence encroaches upon its borders. Adhesions of its closely applied walls begin early on the lateral edges. This coalescence appears to me to be the result of local peritonitis. However, coalescence occurs in distinct localities of the lesser sac, so far as my examinations are concerned. These definite localities are: (*a*), the pars omenti colica; (*b*), the ligamentum phrenico-colicum; (*c*), the omentum colicum Halleri; (*d*), on the posterior surface of the ligamentum gastro-lienalis. So far as regards the pars omentum colicum, every anatomist knows that it coalesces. Its two double-bladed layers become adherent in early adult life. No explanation of this cohesion has attained general recognition. It appears to me that the coalescence is due to peritonitis and the only reasonable explanation which I can offer is that as the folds of the omentum lie on the bowel, microbes or their products pass through and induce peritonitis in the pars colica omenti; I mean that portion of the omentum below the transverse colon, in other words I mean the colic part of the omentum. The blades of the pars colica can be definitely separated in children and sometimes in adolescence, but as a rule the blades coalesce early and in places almost completely. I have found in autopsies that

patches of the pars colica omenti would be adherent to the bowel surface due to local peritonitis, and there was no doubt that the infection had passed from the bowel lumen through its walls. Others may argue that the colica part of the omentum coalesces from absorption of the endothelial layers and consequent adhesions, the absorption being due to lack of nourishment. His's followers would say the serous endothelium being not genuine, acts just like connective tissue cells and coalesces when and where it chooses, but they do not tell us why the coalescence rules so frequently in the pars colica omenti and not other places. Another explanation I offer myself, but not so reasonable as the first is, that the double blades of the pars colica omenti lie on a movable digestive tube and it might induce enough friction by peristalsis to cause a (plastic) peritonitis. The region of the ligamentum phrenico-colicum and gastro-lienale may be taken together and constitute the chief coalescence found so frequently

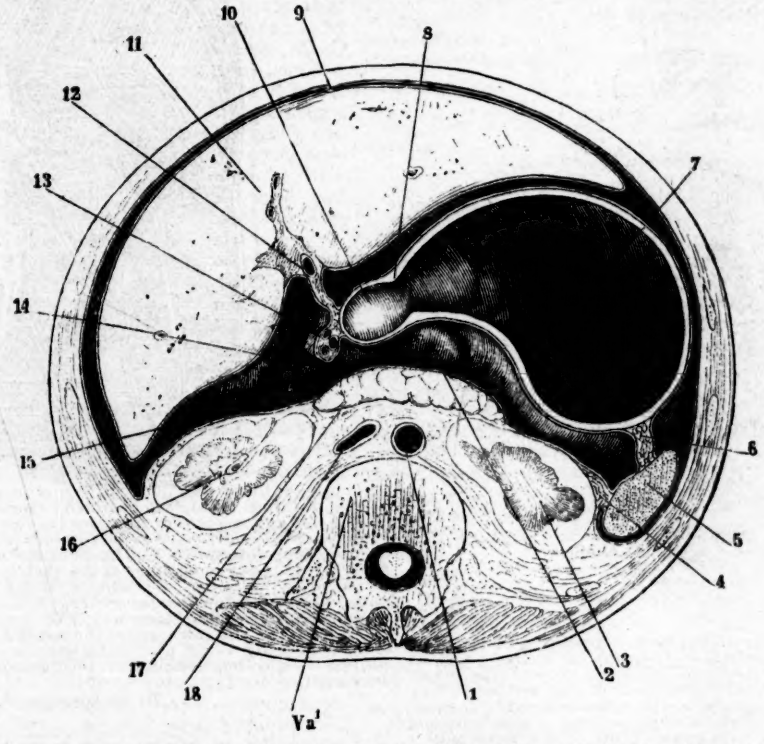

Fig. 43 (After Henle, 1873) represents a horizontal section of a new bone through the under border of the 1st lumbar vertebra, Va 1 to show the disposition of the peritoneum and viscera. The section passes through Winslow's foramen and the bursa omentalis. The upper surface: 1, aorta; 2, posterior liver lobe; 3, left kidney; 4, ligamentum phrenico lienale or better vena splenic ligament. I have found it well marked in many bodies; 5, spleen; 6, ligamentum gastro-lienale; 7, pylorus; 9, ligamentum suspensorium hepatis; 10, beginning of duodenum with its transverse portion; 11, cut surface of the liver whose overhanging border fell under the gall bladder; 12, cystic duct; 13, cystic duct again appearing in right border of gastro-hepatic omentum together with the portal veiir and hepatic artery; 14, orificium epiploicum; 15, sharp border of the ligamentum hepatico-venale; Observe that the real entrance to Winslow's foramen is bounded by the gastro-hepatic ligament and the hepatico-venal ligament; 16, right kidney; 17, pancreas; 18, vena cava. This excellent diagram shows well the disposition of the peritoneum and the relations of viscera.

at the left end of the lesser omental sac. I have found some coalescence at the left end of the lesser omental bag in nearly every adult body. The spleen is the organ around which the adhesions chiefly occur. Infection and constant motion must induce the peritonitis. The dilatation and contraction of the stomach (movement), the proximity to the flexura coli lienalis where infection is apt to arise from sharp foreign bodies abrading the mucosa as they pass around the acute bowel flexure, and the disturbances of the spleen, may account for so much and so frequent coalescence found in the left end of the lesser omental sac. The coalescence takes on peculiar forms in the left end of this peritoneal diverticle. One can find simple adhesions, cicatricial bands and depressions or narrow-necked sacs constricted off. The chief place for constricted off sacs are in the ligamentum phrenico-colicum. Some of the sacs may be completely closed. Multiple adhesions occur immediately to the left of the septum bursa omentalis. Adhesions of various kinds, cicatrices, peritoneal depressions, sacculations and completely closed off spaces may be found at the right end of the lesser omental cavity along the flexuri coli hepatis or Haller's omentum. Hence, these coalescences which occur, as a rule, in the above named localities of the lesser omental sac limited its size in the adult. They allow considerable encroachments on the border surfaces, lessening materially the circumference of the sac. The coalescence occurs at the lateral edges or places where friction or infection are liable to arise. As regards the neck of the sac, orificum epiploicum, I have found it closed in two of the many subjects examined. It nearly always admitted one or two fingers and hence varied in size, but I can not, so far, report definite adhesions distinctly around the mouth of Winslow's foramen, except in two cases which were closed. Of course the gall bladder region is a great peritonitic region, but its inflammation belonged to the gall bladder or the flexura colica hepatis and occasionally to the pylorus and not to the hiatus Winslowii. In several cases adjacent inflammation made it appear that the foramen was closed, but careful investigation showed that it was not, but free from cicatricial tissue.

In the adult omentum or mesogaster there are three segments that may call for a few remarks. There is

1. The mesogaster which belongs to the stomach more strictly. It arises in the mid-dorsal line and passes to the greater curvature. But in the adult this purely stomach segment of the mesogaster is somewhat changed on account of the left blade of the mesogaster being displaced toward the left and the right blade following and becoming fixed against the posterior dorsal wall, that is, the mesogaster forms a part of the parietal peritoneum of the dorsal wall from displacement toward the left. The stomach mesogaster also forms part of the lesser omental cavity. It contains also between its blades, the body and tail of the pancreas. In an adult dog one can note the mesogaster exactly in the mid-dorsal line. It has never shifted its blades to the left and become part of parietal peritoneum of the dorsal wall by displacement or coalescence. This condition of part of the mesogaster becoming part of the dorsal parietal peritoneum in man is no doubt due to the liver pushing the stomach to the left, and forcing the stomach so strongly against the mesogaster that it displaces it (or possibly coalesces it).

Fig. 44 (modified from Testu) illustrates the formation of the great omentum and its relations to the transverse colon. Hep. liver; s, stomach; 1, gastro-hepatic omentum; 5, bursa omentalis; P, pancreas; 2, gastro-colic omentum of the future in which is directed an arrow; D, duodenum; 3, mesocolon; T. c. transverse colon. 4, mesenterium; I, small intestine. The author does not indicate that the lower or anterior blade of the mesogaster and the upper (anterior) blade of the mesocolon is drawn out but this figure suggests that these two layers coalesce.

2. The next segment of the mesogaster, which is altered in the adult, but is a distinct portion of it is the mesoduodenum. In the adult the mesoduodenum appears to be absent, but it is an error to consider it absent. My dissections show the mesoduodenum present. In its mesentry, one can find the head of the pancreas, the lymphatics and nerves and blood vessels all arranged just as in the mesentery of the small intestines. The blood vessels show arcs and arcades, but the mesoduodenum in the adult consists of only the membrana mesenterii propria minus the two shining serous endothelial layers which cover other mesenteries. But the membrana mesenterii propria is a true mesentery though it lacks the shining endothelial layers. The mesoduodenum reaches from the pylorus to the flexura duodeno-jejunalis. It must be remembered that every portion of the bowel must possess the membrana mesenterii propria because it is the neuro-vascular visceral pedicle on which its life depends. The open spiral ring, molded to fit the vertebral column, known as the duodenum, is no exception to the unalterable rule of possessing a membrana mesenterii propria though it does not possess the not absolutely necessary endothelial layer.

3. The third segment of the mesogaster is the anterior layer of the great omentum, *i.e.*, the pars omenti colicum or the pendulous portion of the blades below the colon. This part becomes the omentum colicum Halleri and ligamentum hepato-colicum on the right side. On the left side it merges into the ligamentum phrenico-colicum. In the middle it forms close relations with the transverse colon. The relations of the left end of the great omentum with the ligamentum phrenico-colicum and flexura coli lienalis I have gone over in the relation of the spleen to the peritoneum, as well as its right relations to the ligamentum hepato-duodenale et hepato-colicum and omentum colicum Halleri.

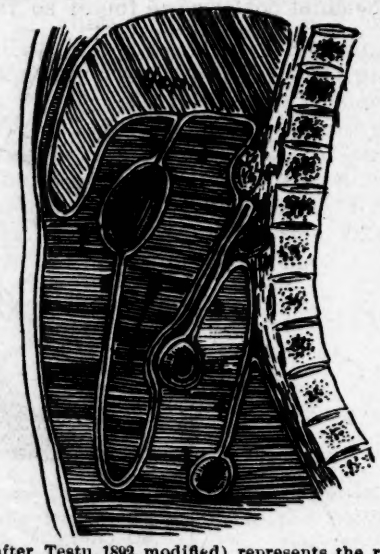

Fig. 45 (after Testu, 1892, modified) represents the relations of the mesogaster and mesocolon transversum just before coalescence. The figure suggests coalescence of the superior blade of the transverse mesocolon and the anterior (lower) blade of the mesogaster. The displacement theory is not entertained in the sketch; Hep. liver, 1, gastro-hepatic omentum; 5, bursa omentalis; S, stomach; P, pancreas; D, duodenum; 3, mesocolon transversum; T C, colon transversum; 4, mesenterium; I, small intestine. The arrow shows the mesogaster elongated. The anterior blade of the mesogaster and the superior blade of the mesocolon would need to coalesce according to the figure. According to the displacement or readjustment theory they would be drawn out.

(To be continued.)

SOCIETY PROCEEDINGS.

Mississippi Valley Medical Association.

Abstract of the Proceedings of the Twenty-first Annual Meeting, held in Detroit, Sept. 3, 4, 5 and 6, 1895.

The Association convened in the Strassburg Academy, and was called to order by DR. H. O. WALKER, of Detroit, Chairman of the Committee of Arrangements.

Prayer was offered by the REV. MARCUS A. BROWNSON, of Detroit.

DR. WALKER then introduced MAYOR PINGREE, who paid an eloquent tribute to the medical profession, and extended a cordial greeting to the Association.

The ADDRESS OF WELCOME on behalf of Detroit physicians was made by DR. J. HENRY CARSTENS, of Detroit.

DR. WALKER presented the President of the Association, DR. WM. N. WISHARD, of Indianapolis, who delivered the

PRESIDENT'S ADDRESS.

He said the importance and advancement of Detroit were

epresented by the standing and intelligence of the local physicians. He referred to the beginning of the four years course in medical colleges, and said that the fear that the new rule would operate to the disadvantage of the smaller schools was unfounded. The President urged the advisability of publishing the records, papers and discussions in some manner to make them accessible to all members. He recommended a permanent executive committee, and regretted that the large number of papers necessitated the holding of two meetings at the same time. He commended the preparations for the convention, and pledged his earnest efforts to the promotion of the profit and pleasure of the convention.

The reports of the Secretary and Treasurer were read and accepted.

The reading of papers was proceeded with, the first one being read by Dr. THOMAS HUNT STUCKY, of Louisville, entitled

THE GOLD COMBINATIONS AS ALTERATIVES.

At a meeting of the Medico-Chirurgical Society of Louisville, April 5, 1894, the author had the pleasure of exhibiting a series of cases who had been taking the preparations of gold and arsenic, known to the profession as *arsenauro* and *mercauro*. He was under the impression at that time that the good effect claimed was produced in three ways: 1, by stimulation of the secreting glands of the stomach; 2, by the probable alterative effect upon these secretions; and 3, that probably there was a local antiseptic influence exerted. The class of patients in which he had used the preparations were people afflicted mostly with consumption, Bright's disease in its various stages, chronic hepatic troubles, and convalescents. He made it a rule with all these cases to withdraw all medicines except the combinations of gold and arsenic. He had selected from a series of cases four or five, which he detailed.

Case 1.—Patient, a male, 60 years of age, with tuberculosis. History good. Eight drops of the mercuric bromid of gold and arsenic were given hypodermically every four hours, this treatment being continued for two months. No deleterious results were noticed. On the contrary, he is decidedly better; physical condition, color, appetite and bodily strength improved.

He reported a few cases out of a large number to demonstrate, in his judgment conclusively, that by the combinations of gold and arsenic we have an agent acting as neither of the minerals do when administered separately, or in other words, we have an entirely new agent in so far as therapeutic action is concerned.

The author then dwelt at considerable length upon the chemic differences between the chlorid of gold and sodium, and the bromid of gold and arsenic (arsenauro) with reference to their therapeutic action and subsequent elimination. He believes that in the action of the combination of bromid of gold and arsenic, it is entirely different from any therapeutic agent known. As compared with mercauro, iodin or the combination of iodids, the action of gold in the combinations named is greater and intensified; that these combinations enter into the circulation as gold and arsenic, and spend their force and exert their influence in an alterative way upon the glandular system; that a marked alterative effect is exerted upon all scleroses (non-malignant); that it is not only a blood-maker, but a blood-builder; that it not only increases the quantity, but the quality of the corpuscles; that under its use hemoglobin is markedly increased; that it is eliminated by the kidneys; that they produce no irritation either when given per orum or hypodermically.

Cases corroborating the beneficial and curative effects of the preparations mentioned by the essayist were reported by Drs. A. P. Buchman, I. N. Love, and Wm. F. Barclay.

The following paper was read by DR. WM. F. BARCLAY, of Pittsburg:

LEGITIMATE PHARMACY.

He defined legitimate pharmacy as that which meets the necessities and demands of the regular medical profession and the people. The medical profession is entirely separate and distinct from pharmacy. Medicines are divided into four classes; patented, proprietary, non-proprietary and secret. There are a large number of cures, mixtures and tonics bearing the name of their originators and deserving of consideration as proprietary preparations. Pharmacists and physicians are interdependent and should work together. Legitimate pharmacy has called into service educated and able men, but the incompetent and dishonest have got in, too, and can not be too severely condemned. Pharmacists make errors, but physicians are careless, too, in writing prescriptions. Physicians should not favor any particular pharmacist and should not receive pay from them. On the other hand, it is unworthy and unprofessional for pharmacists to prescribe drugs or medicines. Legitimate pharmacy should protect the people from the nostrum-makers. Physicians have a right to require the highest skill and competency upon the part of the pharmacist, both for their own interest and the good of their patients.

DR. F. E. STEWART, of Detroit, read a paper on

COD-LIVER OIL.

He considered the powerful stimulant action of cod-liver oil on nutrition, also demonstrating with specimens the difference in the color of oil digested from fresh livers and that prepared from putrid livers; the former being pale, golden or light brown, according to the number of hours digested, and the latter dark brown. The darker oils contain more extractive matter. Dr. Stewart said the text-books contained many errors regarding the preparation of cod-liver oil.

DISCUSSION.

DR. I. N. LOVE, in the discussion, conceded the merits of the paper, but expressed himself as rather skeptical as to the value of cod-liver oil. He declared that there was danger of our getting too professional, and said that that which brings relief to the patient is to be commended. He favored proprietary remedies which have come to the profession through pharmaceutic channels.

GYNECOLOGY AND ABDOMINAL SURGERY.

DR. TOD D. GILLIAM, of Columbus, Ohio, read a paper entitled

UTERINE FIBROIDS—WHEN TO OPERATE.

The medical and electrical treatment of uterine fibroids is to-day in a very unsettled state. While it can not be denied that amelioration or even recovery has followed such lines of treatment, there has not been that degree of uniformity in results calculated to inspire confidence. To the author's mind, there is no better field for a competent observer, than the study of the natural history of uterine fibroids. It will enable us to determine the true value of so-called curative agencies. It will insure a more certain prognosis. It will give the proper cue to surgical interference. If, out of 100 cases, 90 suffering women can be restored to lives of usefulness and happiness, would it not be better to give them a chance? No surgeon is justified in doing hysterectomy or the more serious operations for uterine fibroids when the patient has not experienced sufficient trouble to make it a menace to her life.

DR. L. H. DUNNING, of Indianapolis, Ind., read this paper:

TUBERCULAR PERITONITIS.

In the domain of surgery there is no more attractive study than tubercular peritonitis. The mode of invasion, forms of the disease, diagnosis and treatment were considered in the paper, and finally a brief history of five cases was given.

Tubercular peritonitis, with effusion, is now universally considered a surgical disease. Even in the acute suppurative cases, abdominal section yields a sufficient number of successes to render its employment imperative. Senn excludes all forms of the disease from surgical treatment except the exudative form. Manclaire gives as the chief contra-indications to surgical treatment, the generalization of the lesion, and the existence of profound systemic infection. Linder analyzes the results in 205 operations, with a mortality of 75 per cent. The deaths resulting in most of these cases were from collapse. In cases of involvement of the tubes and ovaries, they should be extirpated. His experience, in two cases leads him to the belief that we should, if possible, avoid using silk ligatures in tying the pedicle when it is necessary to remove the uterine appendages.

Case 1.—Mrs. A. B., aged 56 years, consulted the author concerning the extirpation of a fibroid tumor of the uterus. She had passed the menopause five years previously, but the tumor had gradually increased in size. At the time of examination, it had reached the umbilicus. There was a small amount of fluid in the abdomen, and on opening it probably a quart of clear straw-colored fluid ran out. The peritoneum and intestines were studded with innumerable small grayish deposits of the size of a millet seed. Similar deposits thickly studded the serous covering of the tumor. The intestines were agglutinated, but were not adherent to the tumor. After removal of the tumor by supravaginal hysterectomy, and ventrofixation of the stump, the abdominal cavity was

irrigated, and then leaving the drainage tube just behind the stump, the abdominal incision was closed. Recovery.

In *Case 2*, a diagnosis of ovarian tumor had been made and examination revealed an accumulation of fluid in the abdomen which was encysted. The uterus was fixed and an immovable mass was outlined in the pelvis upon the right side, which the author believed to be a small ovarian tumor surrounded by inflammatory exudates. An exploratory incision was made, and three gallons of dark fluid evacuated from the abdominal cavity. A small tumor was felt in the pelvic cavity. The incision was enlarged, the tumor enucleated, and the pedicle tied off, together with the Fallopian tube. The left tube and ovary were likewise extirpated. On exposing the abdominal and pelvic cavities to view, it was seen that the viscera were thickly studded with small grayish deposits. Microscopic examination demonstrated the presence of tubercle bacilli. Patient now, eleven months after operation, in good health. Two of the five cases reported by the author terminated fatally.

DISCUSSION.

DR. GILLIAM, of Ohio, believes that where we have tuberculosis of the ovaries and tubes, it is better to remove the uterus, too.

DR. J. FRANK, of Chicago, asked whether any of the members, who had operated for tuberculosis of the peritoneum, had noticed a recurrence, or how long the patient was immuned from further attack.

DR. HUMISTON, of Cleveland, Ohio, reported two cases, upon which he had operated successfully.

DR. R. S. SUTTON, of Pittsburg, had seen a good many cases of tubercular peritonitis, upon several of which he had operated successfully. Until within a year he had been in the habit of washing out the cavity with hot water, but now he pays no attention to it, but simply opens the abdomen and cleans out everything. He is convinced that while hot water does no harm, it does no good in that it has no influence upon the disease. He believes in removing as far as possible, all diseased organs.

DR. HENRY O. MARCY, of Boston, operated in 1887 for the first time on a case of tubercular peritonitis, the patient making an easy recovery. He had operated several times since then for this disease with excellent results.

DR. A. H. CORDIER, of Kansas City, Mo., called attention to the fact that Mr. Wells, as early as 1862, operated for tubercular peritonitis, simply incising the abdomen and draining, thus curing his cases. He thinks that drainage is the principal thing that brings about a cure of this disease, but how, is not definitely settled. He said the theory had been advanced by Dr. Morris, of New York, that it is due to the admission of saprophytes into the peritoneal cavity.

DR. BAYARD HOLMES, of Chicago, related an interesting case of adhesive peritonitis cured by operation.

The paper was further discussed by Dr. W. S. Caldwell, of Freeport, Ill.; Dr. Entriken, of Findlay, Ohio, and Dr. B. M. Ricketts, of Cincinnati, Ohio.

DR. DUNNING, in closing, said that Linder's observations were the most complete of any, and he found very little tendency to recurrence of the disease where it was primary and of the adhesive form; but where the disease was secondary and of the adhesive form, there was a strong tendency to recurrence. His own experience had not been sufficiently extensive to furnish reliable data in this regard.

DR. BAYARD HOLMES, of Chicago, was the author of this contribution:

HYSTERECTOMY FOR PUERPERAL SEPSIS—WHEN SHALL IT BE PERFORMED? WITH A REPORT OF FOUR CASES.

The paper was divided into five parts: 1, a report of four cases of puerperal sepsis, treated by four different methods; 2, the pathology of puerperal sepsis in various stages; 3, curettement in the hands of its advocates; 4, puerperal sepsis as a cause of death in Chicago, New York, Brooklyn, and in the Charity Hospital at Berlin, with an abstract of 79 deaths from puerperal sepsis in 6,635 cases.

The first case was a multipara, 26 years of age, of Irish extraction, having a history of tuberculosis of the lungs, confined under unfavorable circumstances, with retained placenta, post-partum hemorrhage, delivered without an anesthetic with the hand of a physician, arrest of a hemorrhage, gradual sepsis, failure of curettement, and death seven weeks after confinement.

The second case was a woman 30 years of age, normal confinement, with sepsis appearing upon the fourth day, of mild character, gradually increasing until six weeks after delivery. Temperature was high, pulse rapid, and symptoms of peritonitis with obstruction of the bowels. Laparotomy. Removal of the right broad ligament, tube and ovary; drainage through the vagina; death after eight days without peritonitis, from phlebitis and pulmonary embolism.

The third case was in a multipara with gonorrheal history, an abortion followed by pelvic inflammation, peritonitis and obstruction three weeks after delivery. Removal of both tubes and abdominal drainage; death after ten days without peritonitis through phlebitis and pulmonary embolism.

The fourth case was a multipara, 32 years of age, delivered by a midwife, with a bad history of puerperal infection, rapid onset of a mild infection, no curettement. Obstruction of the bowels, vomiting six weeks after delivery, with evidences of peritoneal effusion. Laparotomy; removal of the uterus and its adnexa, abdominal drainage and recovery. This uterus and these appendages were carefully examined microscopically. There was evidence of necrotic endometritis, suppurative endometritis, suppurative metritis, suppurative lymphangitis in both tubes with abscess of the ovarian ligament upon the right side and adjacent peritonitis. The blood vessels throughout the broad ligament were found indicating a progressive infective thrombosis. The uterine tissue was filled with pus cells occupying the perivascular and lymph spaces with occasional obliteration of large blood vessels. A great number of mastzellen were found throughout the infected tissues. The author held that the progress of puerperal infection was in this case through infective thrombosis and suppurative lymphangitis, and that the removal of both tubes and drainage would have been ineffectual. He then proceeded to recount the pathologic findings in cases of non-infected puerperal women dying from accidental causes during the first, third and sixth weeks after labor, and also cases dying at somewhat similar times after labor, stating the comparison of the normal and the abnormal uterine and peri-uterine tissues.

Fourth division. In the city of Chicago, during the years 1881 to 1894 inclusive, there were 2,127 deaths from puerperal fever. In New York during six years ending May 31, 1895, there were 250,000 deaths, of whom one-sixth were females, and 2,236 of these deaths were due to the pregnant state. Of these, 1,250 were due to puerperal infection. In Brooklyn, with 112,000 deaths during the same period, 53,000 were females, and of these 867 died of the puerperal state, [illegible] dying of puerperal sepsis. These figures show the importance of the subject.

The question of treating puerperal infection by evidement or curetting was discussed by presenting the work of its own advocates, showing that out of 7,600 cases of labor in the hands of one of the advocates of curettement, 101 were treated by repeated curettement and irrigation. Of these ninety-six recovered and five died.

An abstract of the history of these five cases was presented, showing that there was every reson to believe that after curettement had failed, hysterectomy would have proved efficient in saving the patients.

A series of 6,635 cases of confinement occurring in the Charity Hospital in Berlin, under the care of Hensoldt, Schwarze, Huenermann and Hochselter during four successive years were then analyzed. Seventy-nine deaths from all cases occurred. Of these deaths, thirty-three resulted from puerperal sepsis, and in order to fully understand the possibility of these cases, a short epitome of the history of each was presented, showing that only 3 out of 633 cases were of such character as to give rise to the suspicion that they might not have been saved by an hysterectomy.

The author gave the following conclusions: 1, puerperal sepsis has its origin in the endometrium, and usually travels by the lymph channels or by the thrombosed blood vessels and the lymph channels together; 2, it still causes almost one-half of the deaths which occur in the puerperal state; 3, curetting is ineffectual in many cases of puerperal sepsis; 4, the removal of an infected broad ligament and the drainage of a pelvic abscess or peritonitis is often ineffectual; 5, hysterectomy should be performed, therefore, in such cases of puerperal infection as do not yield to uterine curetting and irrigation; 6, hysterectomy should be done whenever peritonitis is present in the course of puerperal fever; 7, hysterectomy should be performed in cases of puerperal mania where there is a history of endometritis without uremia; 8, hysterectomy may not be helpful in the course of diphtheritic vaginitis and endometritis; 9, hysterectomy may not be helpful in cases of rapid early infection; 10, it may not be useful in cases of septic phlebitis reaching outside of the pelvis.

DR. WM. H. HUMISTON read a paper entitled

A METHOD OF PREVENTING THIRST FOLLOWING CELIOTOMY.

He said: No one who has had any experience in the after-

are of abdominal cases will deny the important place that thirst occupies. It is the one prominent, annoying and distressing symptom, and I know it can be overcome. This is my method of procedure:

The patient should have the usual preparation for celiotomy; *i. e.*, diet, daily baths, cathartics, etc. For three days prior to operation, order the patient to drink one pint of hot water an hour before each meal and on retiring, thus drinking two quarts of water each twenty-four hours, the last pint to be taken three hours before the time set for operating. Do not omit to give the water the day previous to the operation, while the patient is restricted to a limited amount of liquid nourishment and the bowels are being unloaded. We thus restore to the system the large loss of fluid occasioned by the free catharsis, and we have the great satisfaction of seeing our patient pass through the trying ordeal of the first thirty-six hours after the operation in comparative comfort, with no thirst, a moist tongue, and an active renal function, represented by an excretion of from twenty-eight to fifty fluid ounces of urine during the first twenty-four hours, catheterization being seldom necessary. This is in keeping with the full character of the pulse noted.

The above details I have recently carried out in twelve cases. To eleven, chloroform was administered; to one, ether. The time required to complete the operation varied from ten to fifty-five minutes. Whether the case was one of sclerotic ovaries or a pus case with universal adhesions of all the pelvic structures, the result has been uniform and highly satisfactory, thirst being allayed and excretion stimulated.

I believe this method will prove to be efficient in the hands of abdominal surgeons generally, and I publish it early, with all confidence that the twelve cases that I have had will soon be fortified by the reports of many hundreds, and that by it we may avoid a condition that is and has been distressing alike to the patient, surgeon and nurse.

Dr. Miles F. Porter, of Fort Wayne, Ind., read this paper:

CELIOTOMY IN GENERAL SUPPURATIVE PERITONITIS, WITH THE REPORT OF A CASE.

The author first quoted Prandin, who says regarding general puerperal peritonitis: "The women die, no matter what the form of treatment employed." Dr. Baldy says: "To my knowledge, there has never been reported an undoubted case of general purulent peritonitis from any cause whatever, in which an abdominal section or any other line of treatment has succeeded in saving the patient's life." That the mortality of general septic peritonitis is large all will agree, but that it is always fatal is certainly not true. Dr. Porter then reported the case, and closed by saying that the object in writing the paper was to assist in arousing a sentiment against the too prevalent idea that in general septic peritonitis death is inevitable, and to encourage in these cases prompt operative interference.

Dr. A. H. Cordier, of Kansas City, Mo., presented the subject of

PERITONEAL IRRIGATION AND DRAINAGE.

In which he said that the latest works on abdominal and pelvic surgery contain, like the older text-books, very short and misleading articles on the indications for peritoneal irrigation and drainage, and still less explicit are the directions how to use these agents for good, intelligently and correctly. This diversity of opinion among authors leaves the inexperienced beginner in a position of perplexity and doubt as to the special course he is to pursue in his early work. The same principles hold good in draining the peritoneal cavity that are applicable to other parts of the body. No surgeon, with all the antiseptic precautions possible to be used in opening a diffuse abscess of the thigh or other part of the body, would think of such a thing as at once closing a wound hermetically, leaving many broken-down shreds of diseased tissue dangling in the abscess cavity. He might have irrigated the cavity thoroughly with a 1 to 1,000 solution, yet he would not feel it safe to close the wound until after he had made counter-openings and introduced a drainage tube, this being as near ideal surgery as it is possible to obtain in these cases. Freshly boiled distilled or filtered water, cooled to 102 or 110 degrees F., should be used in irrigating.

The author drew the following deductions: 1, drainage is a life-saving process when properly used; 2, to use it is not an admission on the part of the surgeon that his work during the operation is imperfect; 3, the use of the tube alone does not produce or leave any condition that favors the development of hernia; 4, the omentum, or other structures, do not become entangled in the openings in the tube; 5, a small sized flint glass tube, with small openings and open end, should always be selected for pelvic drainage; 6, the tube does not produce fecal fistulæ; 7, the tube should be used when in doubt as to the absence or presence of drainage indications; 8, to depend upon microscopic findings as to whether a given case should or should not be drained is seemingly scientific, but is neither necessary nor practicable; 9, gauze drains should rarely be used, and should always be supplemented by a glass drain; 10, there is no danger of infecting the patient through a tube if the attendant is properly instructed.

Dr. J. Henry Carstens, of Detroit, followed with a paper entitled:

THREE CASES OF HYSTERECTOMY FOLLOWING CELIOTOMY FOR PUS TUBES.

The author summarized his remarks as follows:

"1. It seems to me in the light of my present experience in cases of bilateral pus tubes that a more perfect and complete operation can be performed by abdominal section, with less danger of injury to the bladder and intestines, and with smaller mortality and better ultimate results.

"2. That in certain cases a better immediate result is obtained by vaginal hysterectomy and drainage, but these cases frequently require a second operation to remove the ovarian tissue and parts of the tube, which at first in many cases can not be removed, before a perfect ultimate cure is established.

"3. Where the sympathetic and other nerves are affected, the cause is not in the uterus, ovaries or tubes alone, but part in each. We are unable to state which organ is at the bottom of the trouble. Sometimes it may be only one, sometimes the other, sometimes two or all three; hence, in such cases I would say:

"4. In many cases with marked nervous symptoms, the best results are obtained only after the complete removal of every particle of the generative organs—that is, uterus, tubes and ovaries—be this accomplished at one, two or three operations, per vagina or by abdominal section."

DISCUSSION.

Dr. R. S. Sutton, of Pittsburg, favored abdominal section for pus tubes. He maintained first and foremost that a uterus deprived of its appendages is of no use. Second, that it is an organ, if left, which is liable to tuberculosis, gonorrhea, syphilis, discharges, adhesions, etc. When it is decided to remove the appendages, the uterus also should be taken out.

Dr. Gilliam, of Columbus, Ohio, argued against the removal of the uterus with the appendages in order to save life, the objection being that shortening of the vagina resulted.

Dr. B. M. Ricketts, of Cincinnati, believes total extirpation will be relegated. The dangers are cystocele, hernia, increased danger of prolonging the operation, and shortening of the vagina.

Dr. Henry O. Marcy, of Boston, favored retaining the cervix when it is healthy, and pointed out the reasons why it should not be removed. It helped materially in acting as a support to the vault of the vagina.

Dr. Holmes, of Chicago, in discussing Dr. Cordier's paper, said that drainage was a sort of vicarious redemption for poor surgery. Whenever it is impossible to make a wound clean we must drain, and sometimes we drain when the wound is clean, but we are unable to arrest the hemorrhage. He could conceive of no other indication for drainage, whether in the abdomen, the brain, or any other part of the body, than failure to meet one great indication of wound treatment—to keep the wound clean.

Dr. George W. Calk, of St. Louis, read a paper entitled

TWO SUCCESSFUL OPERATIONS FOR TRAUMATIC INSANITY.

The author said that insanity due to injuries of the head is of rather infrequent occurrence. In 2,200 cases of insanity, treated by Kiernan, 45 were of traumatic origin; while Hays records 61 due to the same causes, out of 2,500 cases. Schlager reports 500 cases of insanity due to concussion of the brain. The author then considered the causes and symptoms.

Case 1 was a male, 26 years of age, carpenter by occupation. Family history good. No case of insanity or of serious nervous disease had ever been present. June, 1885, the patient received a blow from a club in the hands of a negro, the wound inflicted being midway between the fissure of Rolando and the external occipital protuberance, slightly to the left of the median line. It was treated as an ordinary

scalp wound, as it suppurated for three months. Four years after the inception of the wound, he complained of severe pain in the left parietal and occipital regions of the head. October, 1888, he was sent to an insane asylum, where he remained sixteen months. His condition improved, he returned home, but was again sent back to the asylum, where he was detained five months. Four months later he was brought to Dr. Cale, who diagnosed traumatic insanity; advised operation, which was consented to. Recovery.

Case 2 was one of acute mania, following a trauma. Operation performed the same as in Case 1. Recovery.

DR. WILLIAM FULLER, of Grand Rapids, Mich., had operated on two cases of insanity, due to traumatism, one in Montreal in 1870. The patient was discharged from an insane asylum as incurable. When the dura mater was opened, there escaped some serum. A few days subsequent to the operation, the patient was rational, but as soon as the wound closed up the hallucinations returned. He then punctured the brain in two or three different directions with no result except to establish drainage. The man died two months later, and a post-mortem examination revealed a tubercular abscess in the fissure of Sylvius, containing about two teaspoonfuls of pus. The other case was due to syphilis, and was relieved by the removal of the pressure from that disease.

DR. J. FRANK, of Chicago, reported an interesting case of insanity in which he trephined, removing a large piece of bone. A piece of the brain was also excised for examination, and seemed to be healthy. The patient, after being in an insane asylum for five years, made a complete recovery, and took up the thread of life where she left it. She continued in this way for one year, then relapsed. What was the reason of her recovery? In opening the dura, there was a gush of cerebral fluid. Dr. Frank firmly believes that it is not the depression of the skull which produces the bad result, but that at the time of the injury there is a chronic inflammation of the meninges, or a slow inflammatory process, which throws out cerebral fluid. This fluid may be in the ventricles between the dura and the brain, or in the tissues of the brain filaments themselves, and the theory of concussion, held by the profession, he believes is erroneous. He had repeatedly made experiments on dogs by rapping them on the head and rendering them insensible, and immediately thereafter, effusion was found.

DR. MAAS, of Detroit, thought we were in the dark as to the exact cause of the insanity in many cases, and that there was evidently some vasomotor disturbance.

DR. MAAS then read a paper which was largely a statistical one, in which he pointed out the comparative value of the medical and surgical treatment of appendicitis.

DR. WILLIAM E. WIRT, of Cleveland, Ohio, read a paper on

THE USE OF DRY HEAT OF HIGH TEMPERATURE IN THE TREATMENT OF JOINT DISEASES.

Shortly after reading a description of this treatment in the medical journals, the essayist encountered a case of rheumatoid arthritis, in which he resorted to this method. The treatment was followed by great improvement in the motion of the joint, and in the comfort felt by the patient. He also reported a case of rheumatism of a year's standing, in which there was more or less fixation. He broke up the adhesions, made use of the high application of heat, and raised the temperature to 290 degrees, which was followed by decided improvement in the ease with which the patient could move the joint and the relief from pain.

DR. CARTER S. COLE, of New York, presented a paper on

ULCERS OF THE LEG; ALL CAN BE CURED.

What constitutional conditions obtain that favor morbid states, or that retard a return to a healthy state, such a diathesis receives its proper treatment, whether or not ulcers exist. For systematic purposes, ulcers of the leg were designated by the author according to their appearance as healthy, irritable, indolent, etc. In intractable cases, he is inclined to place foremost thorough washing with soap and water and good scrubbing with a stiff bristle hair brush. If the ulcer be inflamed, irritable or painful, anesthesia may be required for this and subsequent steps. The next step is a thorough cleaning out of all soft granulations, and the base of the ulcer with a sharp curette. The edges of the ulcer are freed from their attachment, and in many cases with a curved sharp bistoury he nicks the circumference at intervals of about one-quarter of an inch. If much hemorrhage follows, a pad of gauze wrung out of a 2 per cent. solution of carbolic acid is placed over the wound, and a firm compression bandage from the toes to the knee applied, the wound having been previously cleansed with the carbolic solution. The dressing, when used, is allowed to remain for twenty-four or forty-eight hours, after which he considers the ulcer to have become a simple one, and amenable to treatment as follows: no further lotion is used. The wound is wiped off with dry cotton, and over and completely covering it, he places strips of diachylon plaster to protect the ulcer. Over the surgeon's plaster he applies a pad of sterilized gauze, held in place by strips of rubber adhesive plaster, or often simply by a bandage. He then uses a firm muslin bandage from the toes to the knee, making equable compression. Bandaging should be carefully done. Sometimes he uses two bandages three inches wide and eight yards long. This bandage is not removed unless the discharge comes through, or the leg becomes painful, or the bandage gets loose. When he re-dresses the ulcer, he again uses simply dry absorbent cotton to cleanse the wound, and proceeds as before. Often after two or three dressings, the bandage may remain five to seven days without being disturbed. In some cases a thin scum forms on the ulcer, which must be removed by going over the surface lightly with a curette. With this treatment, in ordinary cases about three weeks will suffice for an ulcer of even a dozen years standing. In extraordinary cases, as much as six weeks may be necessary.

DR. EUGENE FULLER, of New York city, presented an article on

HOW TO DIAGNOSTICATE SEXUAL DERANGEMENTS IN THE MALE.

The author endeavors to impress upon the profession the fact that in the majority of instances, sexual derangements in the male are caused by pathologic processes in or about the seminal vesicles, and further, that they accomplish their results by interfering with the mechanism of ejaculation. He calls attention also to the fact that this side of the question has been almost wholly neglected by preceding writers on sexual disorders, who have devoted themselves largely to psychologic conditions in this connection, the result being that the great majority of the profession associate sexual disturbances with some radical mental defect. Sexual derangements in the male should be diagnostically arranged in four classes: 1, those dependent on seminal vesiculitis; 2, those dependent on neuroses; 3, those dependent on primary mental disease on degeneration; 4, those dependent on general malnutrition and debility. The order of this classification corresponds to the frequency with which these different forms of diseases are encountered in practice. In explanation of the first class of causes, the writer states that it is needless to go into details, since he has recently reviewed that subject very fully in his book, just published.

Where seminal vesiculitis exists, there is generally a previous history of urethral or bladder inflammation, sexual abuse and the like, all of which are agents tending to produce localized inflammation in the seminal vesicles.

The second class of causes either inhibit or excite the sexual center by means of reflex nervous action.

The third class of causes includes the different forms of paranoia, in which the sexual sense exists in a perverted form.

The fourth class of causes is a small one. It includes individuals, generally young or middle-aged, who make complaint that they are capable of little sexual exertion and that feelings of prostration and exhaustion result whenever coitus is attempted.

Dr. Fuller then takes up the clinical examination. In conclusion, the writer makes some special remarks on the different appearances that the varying grades of seminal vesiculitis present to the sense of touch, and calls attention to the fact that in cases of extensive perivesiculitis, involving both sacs, an inexperienced examiner is liable to err in diagnosis, mistaking the condition for hypertrophy or inflammation of the prostate. The author holds that to become perfected in the feel of the seminal vesicles, the finger needs as much practice as does that of the gynecologist in feeling the ovaries and tubes. To obtain the necessary practice, he advises the genito-urinary surgeon to make it customary to examine in this manner every male case coming into the clinic until all normal and pathologic conditions can be fully appreciated.

DR. S. P. COLLINGS, of Hot Springs, Ark, read a paper on

CHRONIC SEMINAL VESICULITIS WITH HEMORRHAGE.

He said there has apparently been little known of the pathologic condition of the seminal vesicles until within recent years. The usual cause of this trouble is the extension of gonorrheal inflammation from the prostatic urethra through the ejaculatory duct into the vesicle itself; at least there is usually a history of a former gonorrhea with a chronic deep urethral trouble remaining. The vesicles are

sometimes involved in very acute and severe gonorrheal inflammation with or without the implication of the cord and epididymus. They may also be involved with a tubercular inflammation, although practically never primarily.

One observer reports a case in which the autopsy showed that the vesicle was primarily involved. The most important symptom is the disturbance of the sexual function. The character and appearance of the seminal fluid is more or less changed. Its consistency is so increased at times that it is gelatinous. The diagnosis of subacute or chronic seminal vesiculitis would be difficult to make, were we to depend entirely upon symptoms in reaching a conclusion. They are vague and at times misleading except the appearance of the blood in the semen, which, if thoroughly mixed with it, would determine a diseased condition of one or both vesicles at once. The author reported two cases, discussed the treatment as applied to them, as well as that generally used in the subacute and chronic forms.

In conclusion, he said that if inflammation of the vesicle occurs in one whose urethra is strictured, cure the stricture before we can hope for permanent results in vesical treatment.

Dr. C. T. Drennen, of Hot Springs, Ark., read a paper on

SYPHILIS AND ITS TREATMENT.

The author spoke more directly of the treatment of this disease in connection with the use and abuse of certain so-called antisyphilitic remedies. He said, we are unable as yet to form definite conclusions as to the usefulness of serotherapy in the treatment of syphilis from the most recent researches, but the reports are quite encouraging, and there is hardly a doubt but that it possesses value in at least the tertiary lesions. Fournier believes the good effect to be due not to any specific, but to its rehabilitory effect upon the system. The author said, in closing, that the hot water at Hot Springs was well known to exert an influence peculiar in its effects for good, and in it we had a veritable Mecca for syphilis. That its action is eliminative, stimulative and antiseptic, and that larger doses of mercury and the iodid of potassium can be given without harm is known to the writer, based upon experience and observation; that its exact or specific action is unknown, and that its value is attested to by the multiplied thousands throughout the country, are propositions that are incontrovertible.

Dr. William T. Belfield, of Chicago, described and presented an instrument for the purposes of securing asepsis in bladder and prostate operations.

Dr. Thomas H. Manley, of New York city, read a paper on

THE ELEMENT OF VASCULAR COMPRESSION IN FRACTURE TREATMENT.

The author considered at length the anatomic structure and vascular function as related to fracture. The extent of damage borne by the vessels in a given case of fracture will primarily depend upon the degree and quality of force applied and the line of treatment adopted. In a series of experiments made during the past year on the blood and blood vessels, under a multiplicity of conditions in the lower animals under anesthetics, one question which the author spared no pains to definitely determine was whether in fracture, as a general rule, the circulation to the distal part of the limb was retarded in cases of fracture. Without entering into detail on the great diversity of vascular phenomena observed in a frog's webbing under the microscope, after single, multiple and compound fractures were produced, it will suffice to say that with few exceptions, immediately and for a considerable period of time after the bone was broken, the circulation in the capillaries and the smaller arteries was completely arrested. In several it was found that for several days all the smaller vessels were motionless, and in a few they so remained until after the fractured ends of the bones united. These experiments were extended to the mammalia, the shafts of the limbs of pups, kittens and adult dogs, of different ages and various sizes.

Dr. H. O. Pantzer, of Indianapolis, Ind., read a paper entitled

THE SIGNIFICANCE OF FISSURE FRACTURES OF THE ARTICULAR ENDS OF THE LONG BONES.

He reported a case of fissure fracture involving the outer third of the head of the radius, having loose attachments to its body. An excessive callus had likewise developed in its site, without affecting union. This splinter and callus were removed, when re-position of the joint was easily attained. The crepitus felt at the first examination and the failure to find it again, should have suggested fissure fracture in the opinion of the author. When the first dressing was removed, the limb seemed to present a perfect condition, and to promise full restoration. These prospects were changed as soon as passive and active mobilization was begun. The probability is that the attempts at mobilization for this kind of injury was begun too soon, and that they were at least partially responsible for the subsequent unfavorable developments. The author concludes that when undue painfulness and subsequent swelling with no gain or even a loss of mobility attends the efforts of mobilization after kindred lesions, we should delay further efforts at mobilization. The possibility of a fissure fracture should be considered in determining the diagnosis and treatment of all cases of joint injury.

Dr. E. W. Andrews, of Chicago, contributed a paper entitled "Imbrication or Lap Joint Method—A Plastic Operation for Hernia." (See Journal June 15, p. 934.)

Dr. Charles A. L. Reed, of Cincinnati, presented a paper on

FURTHER OBSERVATONS ON THE RADICAL CURE OF RUPTURE BY THE INTRAPELVIC METHOD, WITH ILLUSTRATIVE CASES.

In what essential particulars does this intrapelvic method differ from the several methods of radical operation now in vogue? It differs, in the first instance, in the fact that it is intrapelvic, while the others—Bassini's, Halsted's McBurney's, Macewen's—are extrapelvic. The essential point of difference between Dr. Reed's operation and that of Bassini, consists in: 1, leaving undisturbed the extremely tense fascia composing the anterior wall of the ring; 2, in leaving the cord in the position which Nature designed for it, and entirely protected by the normal fascia; 3, in closing the internal ring on the inside of the pelvis, and in protecting it by a strong peritoneal pad; 4, in avoiding the menace to virility arising from a transplantation of the cord, its possible constriction by an artificial ring of tense fascia, and its necessary investment by an inflammatory exudate; 5, in increasing the resistance of the parts by fortifying the fascia comprising the anterior wall of the ring, and by increasing and making permanent the obliquity of the cord within its normal canal.

The advantages of the operation consist in securing by the unfolding of the redundant but attenuated median fascia, the formation of a column which, when consolidated by inflammatory adhesions, has a certain retentive and supportive power the influence of which is of value in preventing recurrence. The anchorage of the recti in the median line restores the retentive power of the wall.

Dr. Henry O. Marcy, of Boston, followed with a paper entitled

SURGICAL TREATMENT OF HEMORRHOIDS.

This paper was in the nature of a reply to the strictures cast upon the Whitehead operation by Dr. Edmund Andrews, of Chicago, in a paper read before the last meeting of the Illinois State Medical Society. Dr. Marcy believes that if in the statistics given by Dr. Andrews the names of the operators were mentioned, most of the disastrous results will be found to have followed the work of incompetent men. His results had been excellent in those cases in which he had done the Whitehead operation, slightly modified by himself.

Dr. John Ridlon, of Chicago, read a paper on

CLUB FOOT,

which he defined as a distortion of the foot in its relation to the leg. The simple and compound varieties of club foot were dealt with. Nearly all of the congenital cases present the compound variety—equino-varus; a few present equino-valgus; rarely there is seen a simple calcaneus. Of simple equinus, the author had met with but a single instance, and of simple varus and simple valgus, he had seen none. Of the acquired variety, simple equinus is by far the most frequently found; next in frequency we find simple valgus; then equino-varus; calcaneo-valgus, equino-valgus, simple varus, and varus in one foot and valgus in the other. The acquired deformity occurs more than three times as frequently as the congenital form. The etiology of the congenital forms was next dealt with, as well as of the acquired forms. Then followed the symptoms, diagnosis and prognosis.

The treatment of club foot is mechanical or operative, or both mechanical and operative. Both these measures were dealt with at length.

Dr. E. E. Tull, of New York, read a paper on "Vaginal Castration." The author claimed for this method a lower mortality, a shorter convalescence and a wider adaptability as it may be practiced in cases too weak for abdominal section.

DR. F. J. GRONER, of Grand Rapids, Mich., read a paper entitled

A NEW PHASE OF CELIOTOMY.

He related a suit for malpractice which had just been terminated in Grand Rapids. The suit was begun against a doctor some time ago, and was for $50,000. The defendant died, but the court held that the cause of action survived, and that the suit could be brought against the estate. The jury returned a verdict for $10,000. The author claimed that he knew there was no malpractice because he was interested in the case and knew just what was done in the operation. He found fault with the laws which permitted a suit against a doctor to survive his death, and be a menace to the widow and children. The speaker thought that the next Legislature should remedy the law. He had the draft of a bill prepared which he thought would remedy the present law, and which he read.

DR. J. FRANK, of Chicago, read a paper on

RESULTS OF FIVE YEARS' EXPERIENCE WITH INTRA-ABDOMINAL SHORTENING OF THE ROUND LIGAMENTS.

Since his last publication, November, 1889, he had had the opportunity of performing this operation seventeen times, with only one failure, and without any deaths. All of the seventeen cases operated upon were for retroversion, prolapsus, and retroversion with prolapsus of the uterus.

Technique of the operation: the median incision is made a trifle lower than for ordinary celiotomy, the round ligament is caught up anteriorly with a sharp or blunt hook, and is then held taut by an assistant. A small, full curved needle threaded with fine silk is then passed through the loop of the round ligament and is brought back in the reversed manner through the other half of the loop. No portion of the broad ligament is included in any of the sutures. Too much stress can not be placed upon this particular procedure of passing a needle through a part of the cord and not around it, for in passing the needle around the cord there is danger of strangulation, as the blood and nerve supply would be entirely shut off by this faulty method of placing the sutures around the ligament.

About 50 per cent. of the cases have been under the observation of the author since the time of operation, which in some instances has been as long as two years, and in all of these the uterus retains its corrected position. This operation should be performed in preference to any other in all cases where the uterus is prolapsed or immediately falls back upon replacing it with a uterine sound, and where pessaries and tampons afford no relief, clearly showing that there must be some force which does not permit the uterus to remain in its normal position.

DR. THEODORE A. MCGRAW, of Detroit, delivered the

ADDRESS ON SURGERY,

which appeared in our last issue. (See p. 387.) He selected for his subject: "The Present State of Our Knowledge of Cancers and Tumors."

(To be continued.)

SOCIETY NEWS.

Litchfield County (Conn.) Medical Society.—The annual meeting of the Litchfield County, Conn., Medical Society will be held at Litchfield on October 8. Papers will be read by Drs. J. W. S. Gouley and Charles Phelps of New York City, J. C. Kendall of Norfolk, and Charles Page of Litchfield.

F. H. WIGGIN, President.

American Orthopedic Association.—Program of the ninth annual meeting, to be held at Chicago, September 17, 18 and 19:

The President's Address, John Ridlon, Chicago.

The Treatment of Fractures from an Orthopedic Standpoint, A. M. Phelps, New York.

Joint Disability following Fractures, James Kerr, Washington, D. C.

Observations on the so-called Congenital Dislocations at the Hip Joint; and the Success of Dr. Buckminster Brown's Treatment by Recumbency with Extension for two years, Wm. Adams, London, Eng.

On the Surgical Treatment of Congenital Dislocations of the Head of the Thigh Bone, Bernard Brodhurst, London, England.

Operative Treatment for Congenital Dislocation of the Hip, Wm. E. Wirt, Cleveland.

A Case of Double Congenital Knee Luxation, H. L. Taylor, New York.

Congenital Absence of Radii, with Operation, S. L. McCurdy, Pittsburg.

The Report of a Case of Congenital Dislocation of the Shoulder, and an Operation for its Relief, A. M. Phelps, New York.

Treatment of Slipping Patella, E. H. Bradford, Boston.

Club Foot, R. W. Lovett and John Dane, Boston.

A Case of Talipes Varus following Section of the Biceps Cruris Tendon. Neurorrhaphy after six years, without benefit, E. Muirhead Little, London, Eng.

A Case of Unusual Varoid Deformity of the Foot. (Illustrated.) E. Muirhead Little, London, Eng.

Removal of Astragalus for Talipes Valgus, James E. Moore, Minneapolis.

Tendon Transplantation in the Treatment of Paralytic Deformities of the Feet; A Report of Cases, Joel E. Goldthwait, Boston.

A Report of Seventy Cases of Splicing of the Tendo-Achilles, H. Augustus Wilson, Philadelphia.

Treatment of Rigid Flat-Foot by the Localized Hot-Air Bath, W. J. Walsham, London.

A Study of the Weak Foot with Reference to its Causes, its Diagnosis and its Cure; with an Analysis of One Thousand Cases of so-called Flat-Foot, Royal Whitman, New York.

Metatarsalgia, L. A. Weigel, Rochester.

One Thousand Cases of Lateral Curvature of the Spine, Treated by Posture and Exercises Exclusively (without mechanical supports), Bernard Roth, London.

The treatment of Lateral Curvature of the Spine without Corsets, Noble Smith, London, Eng.

The Treatment of Scoliosis by Light Gymnastic Exercises, James K. Young, Philadelphia.

On Forcible Correction and Corrective Jackets in the Treatment of Scoliosis, Bernard Bartow, Buffalo.

The Use of Mechanical Supports in Treatment of Scoliosis, L. A. Weigel, Rochester.

Spasmodic Wry Neck, Noble Smith, London, Eng.

Spasmodic Wry Neck, T. H. Myers, New York.

Bone Drilling in Arthritis and Osteitis, Noble Smith, London, Eng.

The deformities Produced by Acute Inflammatory Lesions in Bone, Roswell Park, Buffalo.

Some Considerations of the Mechanical Arrangements around the Hip Joint, H. M. Sherman, San Francisco.

A Review of the Treatment of Hip Disease, B. E. McKenzie, Toronto.

Some Remarks Concerning Hip Disease, with Especial Reference to the Deformity, A. B. Judson, New York.

Presentation of Hip Joint Brace, S. L. McCurdy, Pittsburg.

Operative Measures in Caries of the Spine, E. H. Bradford, Boston.

Caries in Adults, R. G. Brackett, Boston.

Ambulatory Treatment of Pott's Disease, R. W. Lovett.

Spondylitis (?) followed by Hysterical Spine and Chorea, A. B. Hosmer, Chicago.

The Rawhide Corset Spinal Brace, B. E. McKenzie, Toronto.

The Anterior Spine Brace, J. C. Schapps, Brooklyn.

New (anterior) Spine Brace, with exhibition of patients, A. E. Hoadley, Chicago.

The Use of the Plaster Jacket in Caries and the Effect of Position on the Spine, E. G. Brackett, Boston.

The Causative Relation of Suppuration to Tubercular Meningitis in Joint and Spine Diseases, Samuel Ketch, New York.

A Study of the Interior Forms and Burrowings of Lumbar Abscesses, Edmund Andrews, Chicago.

How the Orthopedic Surgeon should Treat Abscesses (tubercular and purulent), A. M. Phelps, New York.

Excision of the Knee as an Orthopedic Measure, W. O. Plimpton, New York.

Kinks in Club Foot Rectification, in Head Traction and in Hip Traction, A. J. Steele, St. Louis.

Pain in the Back, L. A. Weigel, Rochester.

Pigeon Toe, James E. Moore, Minneapolis.

Improved Osteoclast, Nicholas Grattan, Cork, Ireland.

Some Cases of Osteoclasis with the Lorenz Osteoclast, F. S. Coolidge, Chicago.

Idiopathic Osteopsathyrosis, Wallace Blanchard, Chicago.

Statistical Report of the Orthopedic Department of the South Side Free Dispensary, John Ridlon and H. P. Woley, Chicago.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:
PER ANNUM, IN ADVANCE. $5.00
SINGLE COPIES. . . . . 10 CENTS.
Subscriptions may begin at any time and be sent to
THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 86 FIFTH AVENUE, CHICAGO, ILLINOIS.
W. H. LOWDERMILK & CO., WASHINGTON AGENT.

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SATURDAY, SEPTEMBER 14, 1895.

MEDICO-LEGAL CONGRESS AT NEW YORK.

This convention, held under the auspices of the New York Medico-Legal Society, began its session September 4, under the presidency of DR. H. W. MITCHELL, in the United States court rooms, New York City. A gathering of physicians, lawyers and judges, and the reading and discussion of fifty-eight papers on widely varying topics of medical jurisprudence, extending over a period of three days, is an event of unusual interest.

DR. FORBES WINSLOW, the eminent alienist of London, was the star guest of the occasion, and read the opening paper on the "Progress of Lunacy during the Present Century." This will appear in full in next week's JOURNAL. He is reported to have said "that in Great Britain on Jan. 1, 1895, there were 91,081 persons registered as of unsound mind, an increase of 2,014 over the number a year before." He complimented the United States on its magnificent institutions for the insane, and said he was looking forward with pleasure to visiting them. He was inclined to lay great stress upon newspaper publicity as a cause of the present great prevalence of suicide, while recognizing the same tendency of this form of lunacy to act epidemically that is well known to have been the fact in past ages. Respecting certain emotional factors he spoke as follows:

"There is no passion of the mind which so readily drives a person to suicide as remorse. To live in horror the infuriated sufferer feels himself an outcast from God and man, and although his judgment may still be correct upon other subjects, it is completely overpowered upon that of his actual distress.

"In England the great majority of the cases of insanity among women can clearly be traced to unrequited and disappointed affection."

DR. T. D. CROTHERS, Chairman of the Section on Inebriety and its Legal Relations, read a paper on "Inebriety" which was discussed by DR. WINSLOW and others.

DR. OGDEN DOREMUS attacked the system now in vogue for testing milk used by the Board of Health in this city. He cited a number of instances in which adulterated milk satisfied the requirements of the Board, and attacked the law which specified that skimmed milk shall not be sold in this city. He gave the testimony of physicians to the effect that many invalids can not drink unskimmed milk. Skimmed milk, he said, is a healthful diet. He doubted if its sale was forbidden in any other city in the world.

PROF. A. H. MOTT read a paper entitled "Somatic Death by Poison." PROF. CHARLES A. DOREMUS followed in an elaborate examination of "Two Remarkable Cases of Chronic Poisoning." A paper on "Ptomaines," written by PROFESSOR VEIGH, of Harvard, was read by PROFESSOR MOTT. PROF. M. C. WHITE, of New Haven, Conn., rehearsed the details of a trial, in which the case turned upon the identity of arsenics from various sources, illustrating his contentions by photographs. PROF. R. OGDEN DOREMUS exhibited vials of arsenic tending to establish the fact that parcels of arsenious acid obtained from different sources, or from different manufactories, may be distinguished.

DR. PAUL GIBIER made an earnest defense of the worth of vaccination, illustrating it by an appeal to history. These remarks were elicited in rejoinder to a paper by one of the lady members who took the occasion to enter her protest against compulsory vaccination and its so-called errors.

DR. GIBIER read an address on "Bacteriology" which caused quite a flutter, inasmuch as he pointed out the fact that anarchists and other criminals are likely to turn their attention from chemic to bacteriologic studies, for the procuring of a sure and safe (to themselves) means of murder. He said, "there are two aspects of this branch of science, the civil and the criminal."

"Concerning the criminal phase, he said that he was asked by a certain man as to the resultant traces if bacteria were injected into a person. The person was told that certain effects might result from such an injection which could lead to discovery of the cause. But he afterward found that his questioner was a man of doubtful reputation, and his suspicions were at once directed toward the possibility that would-be murderers might resort to bacteriology with deadly effect. In many instances death could be caused by such injection, and the evidence would be hardly discoverable."

"Already desperate men have shown that they are willing to devote infinite labors to the accomplishment of their purposes. Anarchists had pursued elaborate chemic studies. There was no reason for believing that they would not, if they thought it worth their while, devote themselves with all zeal to a study of bacteriology, whereby their designs could be accomplished. A bomb thrown into this city

would cause less harm than a few microbes thrown into the source of water supply."

At the end of the first day, the following were among the permanent officers elected: President, CLARK BELL; Medical Vice-Presidents, T. D. CROTHERS, R. OGDEN DOREMUS, PAUL GIBIER, W. B. OUTTEN, IRVING C. ROSSE, FORBES WINSLOW, H. LOUISE THOMAS; and FRANK H. CALDWELL, of Florida; Secretaries, MORITZ ELLINGER, F. B. DOWNS, ALBERT BACH, CLARENCE A. LEIGHTON, CHARLES A. DOREMUS, of New York; Treasurer, GEORGE CHAFFEE.

A resolution was passed at the close of the session expressing the belief of the conference that medical and law schools should include medical jurisprudence in the curriculum, and that examination in the subject should be made compulsory. Another resolution provided for the appointment of a Standing Committee on Medical Jurisprudence by every National and State Bar Association.

Dr. W. X. SUDDUTH was chairman of the Department of Experimental Psychology, and Dr. G. P. CONN Chairman of the Section on Medico-Legal Surgery. DR. H. A. MOTT presided over a Section on Medico-Legal Chemistry. PROFESSOR M. C. WHITE was Chairman of a Section on Legal Microscopy. Judge A. H. DAILEY, and HON. M. ELLINGER each presided over special sections.

The New York Medico-Legal Society, through its energetic Secretary MR. CLARK BELL, projected and carried out this Congress, which was undoubtedly the largest and most successful public discussion of Medical Jurisprudence ever held.

The Congress ended with a reception and banquet at the Press Club.

MENTAL HYGIENE OF WOMEN.

One of the papers read before the Medico-Legal Congress lately in session in New York, was an urgent plea by a woman, MRS. CONNORS, to the medical and legal professions to do something to cure the marked emotional tendencies of her sex. She asserted that on the physician rested largely the responsibility for this state of affairs, and that if our profession did its whole duty, much of the evil of which she complained would cease to exist. That women are invalids because encouraged to be such by the doctors is a libel on the medical profession, and is probably never intended to be said except by certain irresponsible writers. But that they are humored in their invalidism may perhaps be more justly charged, though any unqualified and absolute condemnation even of this course may be a mistake. When female ailments are not a palpable organic fact, they are the indications of a psychosis, the efficient moral treatment of which may be a serious question, and one may err as much in any attempted brusque repression as in the following the fancies of the patient and admitting to some exten even, the reality of her troubles.

In a recent publication ("The New England Inv lid," Shattuck Lecture, for 1895), DR. ROBERT EDES discusses this subject very fully and instru tively. He concludes that the condition of nervo invalidism is very possibly connected with actu changes in the neuron, analogous to those that ha been demonstrated by HODGE as the result of f tigue, thus indicating a rational possible pathol of neurasthenia in both sexes. Emotional weakne is only one symptom of the disorder, and that it most observable in woman is due to the natural co stitution of the sex as well as to social condition and environment. The "new woman," so far as she to be realized, will not at once throw off all ten encies in this direction that she has acquired throu the ages by heredity, and nervous enfeeblement wi undoubtedly exhibit itself in her by special man festations due to this as well as to the structur peculiarities of sex.

With this basis of heredity, DR. EDES holds, t fully developed condition, ranging in all its form from pure nervous exhaustion to hysteria and i sanity may be acquired at any time, but especially i early life, either gradually or as the result of disea or shock. Its treatment must be based on a caref diagnosis by exclusion of all actual organic disorde and must then consist in restoring the exhausted ner elements by proper nutrition and rest, and the a propriate moral treatment which must be individu in the full sense of the word, and to be successful re quires unlimited tact on the part of the physician. I this, as DR. EDES says, expectant attention is f therapeutic purposes, a much better thing than arg mentative and combative attention; it may be wor policy often to tell a neurotic woman that her ill are imaginary than it is to enlist her vanity in th therapeutics of her supposedly remarkable symp toms. Woman's psychic weaknesses may be thus, i a measure utilized as a counteracting influence to he physical ones, and humoring her ailments be a di rect aid to their cure. When a woman feels ill she thinks she knows it, even if it is not possible t find any tangible objective reason for it.

Women are by their physiologic organization mor inclined to be emotional than men, and the preva lent systems of education and the conventional socia usages probably increase to some extent this tend ency. The "new woman" may throw off these latter but she can not relieve herself of her physiologic handicap of more delicate response to sensory im pressions.

The New England invalid, studied by DR. EDES, i a type too common in our older settled communities, but is largely the result of heredity and the selective process due to emigration. The alarmist note o

Mrs. Connors, while indicating a present evil, would have applied even more forcibly, it is probable, in the past few decades than now, in the greater portion of our country.

THE AMERICAN ORTHOPEDIC ASSOCIATION.

The ninth annual meeting of the American Orthopedic Association will be held in Chicago on the 17th, 18th and 19th of the present month. Some fifty papers, many of unusual interest, are promised in the program which appears elsewhere in this issue of the Journal. Mr. Bernard Roth, of London, England, will contribute a report on 1,000 cases of lateral curvature of the spine treated by posture and exercise. Mr. William Adams, of London, a paper on the mechanical treatment of congenital dislocation at the hip, and Mr. Bernard Brodhurst, of London, on the operative treatment of the same displacement. Dr. H. Augustus Wilson, of Philadelphia, will report on seventy cases of splicing the tendo-Achillis. Dr. Royal Whitman, of New York, whose writings on flat-foot are classic, will discuss the subject of weak-foot, its cause, diagnosis, and cure. Every surgeon who has read the prize essay on hip disease by Dr. R. W. Lovett, of Boston, will be interested to know that, in connection with Dr. John Dane, he will present an essay on club-foot; this will be discussed by Dr. A. M. Phelps, of New York.

A study of the origin and growth of this society might be of interest to those connected with similar special societies. When it is remembered that very few men have any special interest in orthopedics, and that the number of subjects upon which the orthopedist may write is also very limited, one marvels at the well-attended meetings and the 400-page volume of Transactions which the Society publishes annually. We are inclined to think that the vigorous growth of the Association is due in no little extent to the rigid requirements for admission, the high annual dues and the generous expenditure in the publication of the Society's Transactions.

THE COMPLAINT OF THE MANUFACTURING CHEMIST.

For many years there have been complaints that the druggist in filling prescriptions either disregarded the wishes of the prescriber *in toto*, or only made a pretense of using the particular preparation designated in the prescription.

One chemist in St. Louis recently informed the Journal that by an actual test in more than one-half the cases where his preparation was asked for, the article obtained was not his own make. Other manufacturers have made the same complaint. Professional sentiment could crush this business of substitution if once concentrated on this question. If Dr. Smith writes for "Jibb's Ether," "Kibb's Chloroform," or "Maudlin & Co.'s Fluid Extract," if Jibbs, Kibbs and Maudlin & Co., are reputable manufacturers it should be furnished. When Dr. Smith writes a prescription and Druggist A receives it, A is bound in honor to either furnish the exact brand called for, or to privately communicate with Dr. Smith, and explain *why* he can not do so. There is no more reason why it should not be recognized as dishonesty to substitute one article for another, than there is reason to condone any other method of obtaining money under false pretenses. Common honesty requires that a prescription should be filled with the identical articles named therein, and any druggist who makes a business of substitution should be promptly dropped by the profession.

At least, the Illinois Legislature at its last session seems to have so regarded it, for a penalty was enacted on all pharmacists who should substitute one drug for another.

CHRISTMAS WEEK, 1897.

Our Mexican confrères have authorized Professor Pepper to announce that the second Pan-American Medical Congress will be held in the City of Mexico Christmas week, 1897.

In Mexico, the week of the Nativity is the week of festival and rejoicing. The Christmas chimes peal merrily; the city is in holiday garb; entertainment, good fellowship, and overflowing hospitality characterize the season.

Business, while not actually suspended, is carried on only so far as is absolutely necessary for the purposes of commerce and public comfort.

The management have done wisely in choosing Christmas week as the one in which shall be held the second Pan-American Medical Congress.

CORRESPONDENCE.

The Code—Another Reply to Amicus Veritatis.

Canton, Ohio, Sept. 11, 1895.

To the Editor:—The gentleman writing the open letter to you and signing himself *Amicus Veritatis*, reminds me of a ship at sea without a rudder, or a man out on the sea of professional life without a conscience, roaming about seeking whom or what he may devour from a non-professional or commercial standpoint. If the writer were to take up the Code and be determined to read and understand it in the same spirit as it was given us, in accordance with the Golden Rule, he would, I am sure, entertain a more exalted opinion of our profession. I read the communication very carefully, and laid it aside with a silent expression of pity for the writer. Respectfully, S. A. C.

PUBLIC HEALTH.

Anthrax in a New Jersey Dairy.—Representatives from the New York City Board of Health have visited a section of Cumberland County, New Jersey, for the purpose of investigating an outbreak of anthrax among cattle, and its relation to the milk supply of that city. They reported the dis-

ease to be in a limited area, and the affected cattle to be under the supervision and control of the State Dairy Commission, so that none of the products of the infected herd can be shipped.

Crematory for Refuse in New York City.—On September 5, a new crematory for the incineration of city refuse, except garbage and ashes, at Twelfth Avenue and Fifty-third Street, began operations. Three car-loads of material were burned, and the inventor of the system said he was well satisfied with the result. If this system is adopted by the city it will require five or six plants conveniently located to dispose of all its refuse. The capacity of the first plant, when working night and day, is estimated at sixty tons.

Disinfection in Typhoid Fever.—Even when the fecal discharges of a typhoid fever patient are properly disinfected, which is by no means so much the rule as the exception—especially in country districts—little or no attention is paid to the disinfection of the urine. Wright and Semple, however, in a recent issue of the London *Lancet* (July 27 ult.) draw attention to the frequency with which the typhoid bacillus may be found in the urine of such patients; they, themselves, have found them in six out of seven cases examined. It is suggested further that their presence will help to clear up the diagnosis of doubtful cases and to explain the serious kidney complications which are not uncommon in typhoid fever. The late complications of the disease, regarded by some observers as due to the coli communis, are also probably caused by the wide-spread diffusion of the typhoid bacillus.

Cholera Mortality in Japan.—In view of the present prevalence of Asiatic cholera in Japan, the following summary[1] of the ravages of this disease in the land of the Mikado have a timely interest. When cholera first appeared in Japan is not known, but it is supposed that it was in 1822. Between 1858 and 1860 the disease again made its appearance, but there are no returns for those years. They are, however, complete from Jan. 1, 1877 up to July 19, 1895:

Year.	Cases.	Deaths.	Year.	Cases.	Deaths.
1877	13,816	8,027	1887	1,228	654
1878	902	275	1888	811	460
1879	162,637	105,786	1889	751	431
1880	1,580	618	1890	46,019	35,227
1881	9,389	6,237	1891	11,142	7,760
1882	51,631	33,784	1892	874	497
1883	969	434	1893	633	364
1884	900	414	1894	546	314
1885	13,772	9,310	1895 (to July 19)	7,901	4,804
1886	155,923	108,409			

"A Burning Fiery Furnace."—In the discussion on the cremation of garbage and town refuse in the British Medical Association at its recent meeting, Brigade-Surgeon Pringle, M.D., took occasion to call attention to the fact that the subject is a very ancient one. In the East in many places fires are still used, as they were centuries ago, as the great sanitary measure of the city, and the Tobhet or Tophet of Jerusalem, or as Milton calls it, "black Gehennum, styled the type of hell," was the place of burning refuse, where "the fire was never quenched;" and the burning fiery furnace of the plain near Babylon was only a vast receptacle for burning the city refuse; and the fact of those who threw in the Hebrew captives being burnt was due, no doubt, to some defect in the draught-shutters, by which the flames instead of passing up the chimney rushed out at the door. The plan on which this vast cinerator was built is what is seen now in the East where bricks, etc., are burnt for the purpose of securing a draft in that windless land.

Severe Punishment for Milk Adulteration.—It appears that one of the new police magistrates of New York city has been for years interested in chemistry. His brother justices having delegated to him the trial of the adulterated milk cases, he has instituted an unusually severe line of discipline against dealers found guilty by the inspectors of the Board of Health. Fines of $100, with ten days' imprisonment, were among some of the heavy sentences imposed; the lighter grade of sentences was a fine of $25, with or without five days' imprisonment. This latter sentence was the exception, whereas under the old régime the light punishment was almost the invariable rule, except in the case of second or third offenses. The Health Officers are especially desirous of getting convictions of certain wealthy wholesale dealers and jobbers in low test milk, and the court, in some instances, suspended sentence as to the smaller dealers found guilty, for the purpose of securing the coöperation of the latter in bringing the former to justice. This action, if carried out to a successful issue, will have the effect of striking at the fountain head of much of the impoverished milk supply of that city. The court pointed out the fact that the City Board of Health had received very little aid and comfort from the State Dairy Commission in combating the evil of adulterated milk. On this point the magistrate is reported to have remarked: "It is incomprehensible to me why this Commission, which receives such a large sum of money from the State, does not at least lend a hand in stopping this traffic in impure milk. The Commission, so far as I can learn, appears to confine itself to chasing people into boarding houses and arresting them for selling or eating oleomargarine, which is much better than much of the alleged creamery butter in the market."

The counsel for the accused had been carefully primed for his work, and sought to entangle the Health Board's chemists by asking them what sort of milk a cow would give that was bothered with Texan flies, and what was the difference in the milk from a high-fed Jersey and a low-fed Holstein; but the fines fell heavily "all the same."

Leprosy in Cape Colony and India.—The Commission appointed by the Cape government to study the question of leprosy has finished its labors and made its report. According to the census of 1891, the total number of lepers at the Cape was 625—366 men and 259 women—or a proportion of 4.77 per 10,000 inhabitants. Of this number 532 were born in the colony, 41 in the countries of Africa, 1 in Asia, and 51 were Europeans, or of the white race. Among the latter were four individuals who were not born in the colony and were only attacked after arrival in South Africa. The disease seems to have markedly increased, for in January, 1895, the number of lepers was 1,177, or nearly double that of four years previous. As regards frequency, it is found most often among the Hottentots; then come the mixed races, next the Malays, and lastly the Kafirs and Europeans. The Commission is of opinion that the theory of contagion is the only one capable of satisfactorily explaining the increase or diminution of the disease. Moreover, the mode of living in the country favors the spread of the disease. No instance of transmission by vaccination has come under the notice of the Commission. However, the disease is, as noted above, most prevalent among the natives, who are opposed to vaccination. As regards the influence of heredity, the Commission, while neither affirming nor denying it, is of opinion that it occurs but very rarely. No treatment is of any avail; isolation is to be insisted upon and furnishing notice of the existence of lepers should be made obligatory upon landlords, physicians, etc. It is interesting to note that the report of the Commission in India, appointed for a similar purpose, gives exactly opposite results. In 1891 there were 126,361 lepers in India, 31,069 of whom were women. The Indian Commission declares that the dangers of the propagation of leprosy are considerably exaggerated and regards the disease as non-contagious, hence there is no necessity for obligatory isolation, with the exception of vagabonds. The Indian Commission, moreover, recommends the exclusion of lepers from certain occupations. The questions of the heredity and of the contagious nature of leprosy are far from being settled definitely. On the one hand are Zombaco Pasha, Armauer, Hansen and Ehlers; on the other, the Cape and Indian Commissions which arrive at diametrically opposite conclusions.[1]

[1] Abstract of Sanitary Reports, Sept. 6, 1895.

[1] La Semaine Medicale, July 31, 1895.

Health Reports.—The following health reports have been received at the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, August 3 to 31, 2 deaths.

Michigan: Kalamazoo, August 17, 1 case; Calhoun, August 24, 1 case.

Tennessee: Memphis, August 1 to 31, 3 cases.

Texas: Eagle Pass, September 4 to 8, 5 cases, and 3 deaths. Total smallpox cases and deaths among refugees at Camp Jenner, near Eagle Pass, 177 cases, 55 deaths.

SMALLPOX—FOREIGN.

Cairo: July 23 to August 5, 3 deaths.
Calcutta: July 20 to 27, 5 deaths.
Constantinople: June 1 to 31, 39 deaths.
Dublin: August 17 to 24, 3 cases.
Gibraltar: August 11 to 18, 1 case.
Havana: August 24 to 31, 2 deaths.
Hong Kong: July 20 to 27, 1 death.
London, Eng., August 17 to 24, 6 deaths.
Montevideo: July 27 to August 3, 1 case.
Naples: August 16 to 23, 1 case, 1 death.
Nice: July 1 to 31, 1 death.
Nogales: August 31, 1 case, 1 death.
St. Petersburg; August 3 to 10, 4 cases, 1 death.
Prague: August 3 to 17, 2 cases.
Rio de Janeiro: August 3 to 10, 68 deaths.
Rome: June 22 to 29, 1 death.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, August 3 to 10, 7 deaths; Santos, August 3 to 10, 2 cases.

Cuba: Havana, August 22 to 29, 90 cases, 30 deaths; Matanzas, August 21 to 28, 12 cases; Santiago, August 17 to 31, 44 deaths; Santa Clara, August 24, 2 cases; Santa Domingo, August 24, 2 deaths; Sancti Spiritu, August 24, 30 cases.

Puerto Rico: San Juan, August 3 to 24, 21 cases, 14 deaths.

CHOLERA—FOREIGN.

China: Hong Kong, July 28 to August 3, 2 deaths.

France: Cognac, August 17 to 24, 1 death.

India: Calcutta, July 20 to 27, 9 deaths; Bombay, July 27 to August 2, 1 death; Singapore, July 16 to 22, 44 cases, 37 deaths.

Japan: Nagasaki, August 5 to 12, 40 cases, 30 deaths; Osaka and Hiogo, August 3 to 10, 243 cases, 179 deaths; Yokohama, August 2 to 16, 36 cases, 27 deaths.

Turkey in Asia: Aleppo, July 17 to 24, 24 cases, 21 deaths; Hamah, July 22 to August 3, 20 cases, 5 deaths; August 7 to 10, 1 death.

BOOK NOTICE.

Report of the American Humane Association on Vivisection and Dissection in Schools. Chicago, 1895.

This pamphlet consists mainly of replies to circulars sent out by the Humane Association in regard to the benefits and propriety of vivisection in the teaching of children. Naturally, they are nearly all condemnatory—in fact, there is very little to be said in any way for the practice. It is a very different thing from experimental investigation, and young children can, and readily will take physiologic facts on trust without practical demonstration, which will, at the best, be likely to be very imperfectly appreciated.

The tendencies of children to torture animals need checking, and vivisection under the sanction of instruction is, with them on the whole, liable to do harm rather than good.

NECROLOGY.

ROBERT L. VAUGHT, M.D., of Chattanooga, Tenn., was born May 24, 1863. He was drowned August 28 ult., while bathing in the Great Kanawha River at Henderson, W. Va. He was spending his vacation at the home of his nativity and when the news of his death reached his friends and relatives, both far and near, sorrow was general. Professionally and socially but few physicians enjoyed the popularity he attained. Dr. Vaught was graduated in medicine March, 1884, at the Medical Department of the University of Nashville and Vanderbilt University, and served one year as interne to the City Hospital of Nashville, located in Chattanooga. At the time of his death he was professor of anatomy in the Chattanooga Medical College; Member of the Chattanooga Medical Society; Tennessee State Medical Society and the AMERICAN MEDICAL ASSOCIATION. He left an aged mother and an only brother beside other relatives and numerous friends who mourn his untimely death.

HENRY W. RAND, M. D., of Brooklyn, N. Y., August 31. Dr. Rand was born in Nova Scotia in 1851 and was graduated at Acadia University in 1873. He received his degree as Doctor of Medicine in the Bellevue Hospital College of Medicine in 1877. In that year he was appointed resident physician at the Brooklyn Hospital, and later visiting surgeon to the Brooklyn Orthopedic Infirmary, filling this position for several years. He was visiting physician to the Home for Destitute Women and Children for several years and had charge of the department of women's diseases at the Atlantic Avenue Dispensary. In 1884 he was appointed attending surgeon of the Long Island College Hospital, and in 1890 to St. Johns Hospital, filling both places at the time of his death. ——N. E. Wright, M.D., Berea, Ohio, September 10. He was a native of Ohio, and was 61 years of age.——M. H. Murphy, M.D., Scranton, Pa., August 4, aged 32.——H. C. Reid, M.D., Mariposa, Cal., September 7.——C. V. Jones, M.D., formerly of Indiana, at San Jose, Cal., September 7, aged 40 years.

MISCELLANY.

Jefferson Medical College.—The chair of pathology in the faculty of the Jefferson Medical College in Philadelphia is vacant.

An Illegal Practitioner Sent to Jail.—In New York city, the lawyers employed by the County Medical Society have secured the conviction of a "Doctor" Ruffo for practicing medicine without a license and registration. He was sentenced to a three months' term in the penitentiary.

Medical Students in Holland.—The universities of Holland have an attendance during the current collegiate year of 2,940 students, of whom 1,486 are studying medicine, distributed as follows: 624 at Amsterdam; 349 at Leyden; 277 at Utrecht; and 236 at Groningen.

Parisian Practice.—Mons. X, according to *Le Journal de Medicine de Paris*, consulted his physician, saying that he was not feeling at all well, being tormented nightly by "bad dreams," and especially by visions of women in "the altogether," *a la* Trilby and Mother Eve. "That is easily remedied," replied the doctor. "Every night before retiring you will take an infusion of fig leaves."

Treatment of Phlegmonous Inflammations.—In the lesser phlegmonous inflammations alcohol dressings abort the inflammatory process and in the graver forms they cause the rapid formation of a circumscribed abscess filled with thick pus. Alcohol of 60 to 90 degrees is to be used. The skin of the inflamed area is cleansed with ether; if there is any open wound it is covered with powdered iodoform; then a thick, even layer of cotton soaked with alcohol is applied with a proper protective over it; this latter is pierced with holes or slits so as to allow evaporation of the alcohol and prevent any caustic action. The dressing is kept in place for twenty-four hours and must be renewed daily for some days after the disappearance of all tumefaction.[1]

To Examine Medical Students.—Springfield, Ill., August 31.—The Illinois State Board of Health has issued a call for examinations to be held in Chicago, September 16 and 17, of all matriculates in medical colleges not graduates of some literary institution. The branches used in examinations are reading, writing, grammar, geography, arithmetic, composition, elementary physics and United States history. The questions are furnished by the faculty of the State University, who will rate the papers and issue certificates to successful applicants. These examinations have heretofore been

[1] Gaz. Med. de Paris, No. 28, 1895.

conducted by the faculty of different medical colleges. The State Board decides that every applicant for matriculation should submit to the same examination conducted by disinterested persons.

The regulation, while in some respects desirable, would have been in better taste if this institution were not the identical one that had a somewhat shady project on foot to buy for the State one of the medical colleges of the city. As the President of the Board of Health favored the scheme, and was at the same time a member and alleged stockholder of the medical college in question, this action, taken after the colleges not in the secret had already issued their announcements, smacks of favoritism and should be revoked.

Dr. John S. Billings, U. S. Army.—*L'Union Medicale* of August 31, says: "Surgeon-General Billings, of the United States Army, has asked to be retired in the month of October, This very distinguished confrère will leave the Army Medical Museum, of which he is administrator, and the library of the Surgeon-General's office, of which he is librarian, institutions which have been made what they are by his ability and devotion.

Before taking his retirement Surgeon-General Billings hopes to terminate the last volume of the Index Catalogue. an immense and precious work for which the entire medical profession should be grateful to the Government of the United States, its Army Medical Department, and above all to Dr. John Shaw Billings. In retirement Dr. Billings will not cease to work. He has accepted the Chair of Hygiene at the University of Pennsylvania.

Clinical and Bacteriologic Researches on Osteomyelitis.—Carrow has studied seventy cases of osteomyelitis from a clinical and bacteriologic point of view—thirty-one acute the rest chronic. The age of the patients with the acute variety was from nine months to 20 years; with the chronic from 3 to 22 years. Thus the disease seems to be one of youth. In these cases the disease had lasted from four days to four weeks before surgical intervention. The length of time influences the character of the exudate, which is sometimes mucous, sometimes muco-purulent, sometimes altogether purulent. Of the thirty-one acute cases both limbs were involved fifteen times, and six times in the thirty-nine chronic cases. In twenty cases it was possible to trace the source of infection either to an infectious disease, a suppurating wound, an ulcer of the leg, or a carious tooth. The rôle of dental caries was proved by the identity of the organisms in the teeth and in the osseous lesion. The pus was examined in twenty-six cases; in eleven the *S. aureus* was found; in six the *S. albus*. In thirteen cases the blood was examined with nine positive results. In these cases a large number of staphylococci were found beside a number of streptococci. Pus from an osteomyelitic foyer containing staphylococci injected into animals in many cases produced osteomyelitis, The same experiments with the colon bacillus, Eberth's bacillus and Löffler's bacillus were negative. With the streptococcus it was possible to cause medullary abscesses in animals. Immunizing animals with serum from the osteomyelitic ones or with weak cultures succeeded in a certain measure. The serum appeared to confer a greater immunity than the cultures against staphylococci of medium virulence; but both were powerless against staphylococci of increased virulence from passage through a successive series of animals.[1]

Trendelenburg's Method for Varicose Veins.—Trendelenburg's researches on the formation and growth of varicose veins in the lower limbs have shown that the trouble lies, not in the difficulty which the blood experiences in circulating in the veins, but in the pressure of the column of blood heaped up above—that is, in the saphenous vein, a column whose weight rests on the peripheral veins on account of the weak valves of the saphenous. Trendelenburg's method—ligature of the saphenous at the upper part of the thigh—is based on this theory. Perthes, operating on forty-one cases, had thirty-two definitive cures. He had some relapses, due to the vein becoming permeable again some time after the operation; consequently, the author recommends resection of a few centimeters of the vessel. The successes of this method are remarkable—not only for the effect they have on the disappearance of pain, but also for the improved local conditions. Varicose ulcers were notably ameliorated in a short time by ligature of the saphenous. This method appears worthy of adoption; its advantage over Madelung's method—extirpation of the varices—consists in the much greater facility with which it may be performed.[1]

[1] Rev. Int. de Med. et Chir. Prat. No. 15, 1895.

Damages Recoverable for Breach of Contract for Sale of Practice.—The losses recoverable on breaches of contract are those directly connected with and arising from the breach. In case of the breach of contract for the sale of an established business, and its good will, damages may be given on proof of the diversion of the business from the purchaser, or the basis for damages might be furnished by proof of acts or conduct on the part of the vendor causing loss of the business to the purchaser, entitled to all the income, and to the aid of the vendor in securing the income. But for the breach of a contract of sale of a physician's practice, the Supreme Court of Louisiana holds (Rigney v. Monette, decided March 25, 1895) that damages for the amount the purchaser claims he would have made from professional practice given up, relying on the contract, do not arise from the breach complained of, and are not within the measure of damages fixed by the law in such cases.

Rivals of the Doctor.—A French physician figures out in *La Medecine Moderne* that the doctor is lucky if he sees one sick person in five, and that, as things now go, of all human beings doctors will soon be those who will see the fewest sick people. What with the strong-minded individual who does not believe in doctors, but "knows it all" himself; the mother, grandmother and mother-in-law, each of whom doctors all the children, big and little; the water-, faith-, mind- and other "curists"; the volunteer, who has an "infallible remedy" for every ailing friend and acquaintance; and, finally, the prescribing druggist—it is doubtful if even one in five of the sick reach the doctor's office or ever send for him. He concludes that "the medical profession, which certainly ranks far above many other callings, is in reality a very inferior one in regard to material things, and from this point of view many trades necessitating manual labor often soar far above it. If we want a coat we can not do without the tailor, nor without the shoemaker for a pair of boots; yet in that which appertains to the art of healing any ignoramus can be a formidable rival to us; so that not only have we, in the race of life, come to struggle against other medical men, but also against a multitude of individuals with various crotchets who enrich themselves by filching the fees out of our very pockets."

American Medicine's "Chief Ornament" in Edinburgh.—According to a personal note in *Leslie's Weekly*, August 29, Dr. Mitchell, of Philadelphia, has fallen heir to the mantle of Dr. Holmes—in the estimation of the Scotsmen—for it says, in effect, that the doctorate of laws recently conferred on Dr. S. Weir Mitchell, of Philadelphia, by the University of Edinburgh, is the second he has received, the first coming from Harvard; but it was left for the Scotch university to do him the extraordinary honor of referring to him as the "chief ornament to medical science in the New World." In addition to his great attainments as a physiologist, Dr. Mitchell has the unique distinction of maintaining a practice in London as well as in Philadelphia. He is one of the numerous physicians of celebrity, of whom Smollett and Oliver Wendell Holmes were examples, who have excelled in letters as well as medicine. Dr. Mitchell is well known both as poet and as in novelist, and it is not unlikely that a "run" on one of his books would have pleased him even more than the Edinburgh degree.

[1] Gaz. Med. de Paris, No. 28, 1895.

Bellevue Hospital.—The Commissioners of Public Charities and Corrections have lately asked the members of the Fourth Division of Bellevue Hospital to form an organization for the purpose of giving instruction to graduates and third year students. The medical staff of the Fourth Division consists of Drs. C. L. Dana, George B. Fowler and Alex. Lambert. The surgical staff consists of Drs. J. W. S. Gouley, Chas. Phelps and W. F. Fluhrer. The gynecologist is W. Gill Wylie. The following communication, from the commissioners, and the answer thereto are given for the information of the profession:

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION, COMMISSIONERS' OFFICE.

NEW YORK, Sept. 3, 1895.

Gentlemen:—I am directed to transmit the following proceedings of the Board, at a meeting held this day:

Resolved, That the seven members of the Fourth Division of Bellevue Hospital be requested to form, without delay, an organization for practical instruction to graduates in medicine and third year students, in the hospital and the bureau of medical and surgical relief for out-door poor.

Resolved, That the members of the fourth division shall be empowered to draw, from the institutions subject to the division, all necessary clinical material.

Resolved, That the commissioners will heartily coöperate with the fourth division in carrying out the scheme of instruction.

Resolved, That certificates issued, to those who shall have attended instruction, and signed by the seven members of the fourth division, shall be countersigned by the commissioners, and shall bear the seal of Bellevue Hospital.

By order, G. F. BRITTON, Secretary.

NEW YORK, Sept. 6, 1895.

To the Commissioners of Public Charities and Correction:

Gentlemen:—At a meeting of the Fourth Division of Bellevue Hospital, held on the fourth day of September, your communication was presented and read. The members of the division desire to express their high appreciation of the step you have taken, in the interest of the hospital and of the people at large, in thus adding to the usefulness of the vast amount of clinical material in Bellevue. They have therefore resolved to accept your invitation to become a teaching corps, have formed the organization which you requested, and have further resolved to begin, on or about the first of October, the courses of instruction instituted by your honorable board. Each course of instruction shall continue six weeks, and not less than five courses shall be given annually. Very respectfully,

479 Fifth Avenue. W. F. FLUHRER, M.D., Secretary.

The Kings County Hospital, New York.—A legislative committee has recently been investigating certain charges against the management of the public institutions, for the pauper sick and insane, in the county called Kings, of which the great city of Brooklyn is the center. Since the temporary adjournment of the inquiry, a report by the medical officers of these institutions has been drawn up, a part of which is quoted below so far as it relates to the county hospital above named. The report, addressed to the commissioners of charities who are in charge of the county buildings, is a kind of half-hearted attempt to meet, without answering, the charges that have been made year after year in about the same tenor, but without any material or permanent advantage.

The charges set forth that the hospital was overcrowded, uncleanly, unsanitary, and that drunkenness and abuse of patients by male nurses were common. The report, after setting out the objects of the physicians' investigations, as stated above, says:

"Overcrowding. This hospital of thirty years ago is compelled to receive all comers, residents of the county, suffering from no matter what disease (contagious diseases alone excepted). The building is compelled to shelter more than double the number of patients it was intended to accommodate. The hospital is overcrowded, and must remain so until the authorities of Kings County either enlarge the present building to double its size or, what the staff considers a better plan, build a new hospital elsewhere.

"Uncleanliness. Uncleanliness is not an unnatural result of overcrowding, nevertheless the staff have been surprised at the cleanliness of the institution. The wards and corridors are as clean as paint, kalsomine, soap and water can make them, as visitors can easily see for themselves.

"Unsanitary condition of buildings. The plumbing itself is in very fair condition, apart from its location in the wards.

"Nurses. With regard to the nursing at the hospital, it is as good as can be expected under a system which does not provide for a training school.

"Night service. In regard to having a medical officer on duty at night, it may be said that the internes at the hospital are on duty continuously and answer night calls as promptly as day calls.

"Visiting staff. As the present staff have made during the last year over sixteen hundred visits to the hospital it can hardly be said that the patients have lacked proper medical or surgical treatment. Constantly diminishing appropriations, however, have forbidden anything more than temporary repairs for a number of years."

Have We Too Many Doctors?—Our contemporary, the *Medical News*, in its issue of July 27, editorially discusses the comparative standing of the American medical profession; and, among other wise and timely remarks, refutes the trite and senseless charge that, because its numbers are disproportionately large, therefore the quality of the profession must be poor. It is pointed out there are other factors to be taken into consideration beside that involved in the statement that this country has 1 physician to every 500 inhabitants, while England has only 1 to 2,000, France 1 to 3,000, Germany 1 to nearly 4,000, and Spain and Russia 1 to 7,000 of population. There is the law of supply and demand for one thing, and the density of population for another. One competent physician, says the *News*, is probably capable of properly performing the medical services required by 1,500 or 2,000 people—provided, that they live within a radius of three miles of his office; and for an even larger number within a mile. But what about the district where he would have to drive forty miles to reach 500 people? A physician is as absolute a necessity to a "cowboy" town or mining-camp of 300 people, with no other medical aid within fifty miles, as to a factory town of 5,000. Indeed, many a "superfluous," poorly educated, uncouth country doctor, out on the frontier, with his clientele scattered over two counties, who loves his patients and profession, commands as much of our admiration and respect, deserves as well of his country and is as "necessary" in every way and sense of the term as the most scholarly and polished consultant of a European center. If we were to divide this country and England each into geographic settled districts, each requiring the residence of a physician, nearly two-thirds of our "excess of doctors" would disappear at once. Furthermore, it is argued, "the number of physicians is a good index of the intelligence of a race. And as civilization becomes more complex and the whole field of preventive medicine—scarcely surveyed as yet—is added to our domain, a still higher proportion of skilled, intelligent advisers will be demanded by the community."

Hospital Notes.

GROUND has been broken at Kankakee, Ill., for a $10,000 emergency hospital building. The institution, although a private one, will be under the charge of Sisters of Charity. ——It has been stated that over $5,000 has been subscribed for the erection of the proposed German Hospital at Buffalo, N. Y.——Work has been begun upon the new wing of the Buffalo General Hospital.

Washington Notes.

HEALTH OF THE DISTRICT.—The report of the Health Officer for the week ended August 31, is as follows: number of deaths (still-births not included): white, 59; colored, 52; total, 111. Death rate per 1,000 per annum, white, 16.71; colored, 31.08; total, 21.41. Death rate per 1,000 per annum for corresponding week last year, 16.78. Still-births: white, 2; colored, 6; total, 8.

GARBAGE DISPOSAL.—After many months of investigation and study by the Health Officer and the Commissioners, the question of garbage disposal in the District is at last settled. It is to be destroyed by cremation and the "Smith furnace" is the one adopted as being the most satisfactory. The question of location of the plant is now the all absorbing item. As usual, protests and indignation meetings are springing up, opposing any location suggested by the authorities.

REPORT OF THE WOMAN'S DISPENSARY.—The report of Dr. Magruder Muncaster, secretary of the Woman's Dispensary, for the past fiscal year states that the allowance from the Commissioners is $500, and that the amount received from other sources is $362.25, making a total of $862.25. Out of a little less than that the dispensary has compounded and given away 4,099 prescriptions; treated 123 male and 1,060 female medical cases, 52 male and 189 female surgical cases, made 816 external applications and attended 3,568 patients. While the dispensary has sufficient wards for the accommodation of many who require hospital treatment, it is a source of regret that it has been compelled to close the hospital portion for several years, owing to lack of funds to pay for nurse hire and provide proper food. For this purpose there is asked an increase of $1,000 in the appropriation.

REPORT OF THE U. S. HOSPITAL FOR INSANE (ST. ELIZABETH).—The fortieth annual report of the board of visitors to the Government Hospital for the Insane has been received at the Interior Department. The admissions during the past fiscal year were 371, more than ever before except during the last two years of the war. The whole number under treatment, 2,052, is larger than ever before. The recoveries during the year were 98 and deaths 179. A mortality of 10.73 per cent. of the average number of inmates and 8.72 per cent. of the whole number under treatment. More than half the sickness is charged to the flats of the eastern branch of the Potomac, which lie exposed to the sun. Additional buildings are now under construction, which will relieve the present crowding. The estimates for current expenses during the coming fiscal year are $368,500, divided between the District appropriation and the sundry civil bills in the proportion of $104,049 to the former and the remainder to the latter. This is on the basis of $220 per capita for an average of 1,675 inmates. The other appropriations recommended are as follows: general repairs, $20,000; rebuilding shops, $7,000; laboratory extension, $1,500; electric fans and resistance coils, $6,000; heating apparatus for new buildings, $4,500; renewing and fireproofing floors, $2,500; kitchen and dining rooms, $2,400. The extension of the laboratory is necessary for the important pathologic work, which is being carried on in connection with the treatment of the inmates.

WATER METERS TO BE USED.—The Commissioners have decided that all large consumers of water shall use meters, after October 1 next. The rates will be 3 cents per each thousand gallons, payable quarterly. A number of rules and regulations have been adopted with penalties for their violation. The principal penalty is the cutting off of the water and a $2 charge for turning it on afterward.

AGRICULTURAL CHEMISTS ASSOCIATION.—About sixty government chemists met during the week at the lecture room of the National Museum. It was the Association of Official Agricultural Chemists, and included many of the State chemists of the various States, beside a large number of other government workers and those interested in agricultural education. The meeting was called to order by H. A. Huston, the president. The object of the Association is to secure uniformity and accuracy in the modes and methods and statements of analyses relating to fertilizers, soils, cattle foods and dairy products. The annual meeting usually lasts three days, and is made the time for presenting papers of general interest to the members. The Secretary of Agriculture was present at the opening and made a short but instructive address.

REPORT OF THE WASHINGTON HOSPITAL FOR FOUNDLINGS.—Dr. Z. T. Sowers, President of the Washington Hospital for Foundlings, yesterday submitted his report. He states that the average number of children during the year was thirty-four. The expenses have been greatly increased and the directors ask that the appropriation for 1896-97 be increased to $7,000, as the indications are that the number of applications for admission will be greatly in excess of any previous year. Attention is called to the fact that there were twenty-three deaths during the year, while during the year ending June 30, 1894, there were thirty-four deaths.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from August 31, 1895, to September 6, 1895.

Leave of absence for two months, to take effect on or about September 15, 1895, is granted Captain William C. Gorgas, Assistant Surgeon.

1st Lieut. Alexander S. Porter, Assistant Surgeon, is relieved from duty at Fort Keogh, Montana, to take effect on the expiration of his present sick leave, and ordered to Fort Huachuca, Arizona, for duty.

Major Joseph K. Corson, Surgeon, granted leave of absence for two months.

Captain Leonard Wood, Assistant Surgeon, is relieved from duty at Fort McPherson, Georgia, and ordered to report in person to the Attending Surgeon in this city, for duty as his assistant.

Captain Marlborough C. Wyeth, Assistant Surgeon, is relieved from duty at the Army and Navy General Hospital, Hot Springs, Arkansas, and ordered to Fort Huachuca, Arizona, for duty.

Captain Julian M. Cabell, Assistant Surgeon, upon the expiration of his present sick leave, will be relieved from duty at Washington Barracks, D.C., and ordered to report to the Surgeon-General.

1st Lieut. Frank T. Meriwether, upon the expiration of his present sick leave, will be relieved from duty at San Diego Barracks, California.

1st Lieut. Charles E. B. Flagg, Assistant Surgeon, upon his return from duty in the field, will be relieved from duty at Angel Island, California, and ordered to Fort Hancock, Texas, to relieve 1st Lieut. Francis A. Winter, Assistant Surgeon. 1st Lieut. Winter, on being thus relieved, is ordered to Fort Grant, Arizona, for duty, relieving 1st Lieut. George M. Wells, Assistant Surgeon. Lieut. Wells, on being thus relieved, is ordered to Fort Mason, California, for duty, relieving Captain William L. Kneedler, Assistant Surgeon. Captain Kneedler, on being thus relieved, is ordered to San Diego Barracks, California, for duty.

Captain Walter D. McCaw, Assistant Surgeon, is relieved from duty at the Presidio of San Francisco, California, and ordered to Fort Ringgold, Texas, for duty, relieving 1st Lieut. Champe C. McCulloch Jr., Assistant Surgeon. Lieut. McCulloch, on being thus relieved, will report in person to the Commanding Officer, Army and Navy General Hospital, Hot Springs, Arkansas, for duty at the Hospital.

1st Lieut. George M. Wells, Assistant Surgeon, granted leave of absence for two months, to take effect on his relief from duty at Fort Grant, Arizona.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U.S. Marine-Hospital Service, for the sixteen days ended August 31, 1895.

Surgeon John Vansant granted leave of absence for thirty days, August 24, 1895.

Surgeon W. H. H. Hutton detailed as chairman board for physical examination of officers revenue cutter service, August 22, 1895.

Surgeon Fairfax Irwin detailed as chairman board for physical examination of candidates revenue cutter service, August 30, 1895.

P. A. Surgeon C. E. Banks detailed as member board for physical examination of candidates revenue cutter service, August 30, 1895.

P. A. Surgeon G. B. Young, upon expiration of leave of absence, to report at Bureau for temporary duty in laboratory, August 28, 1895.

P. A. Surgeon B. W. Brown detailed as recorder board for physical examination of candidates revenue cutter service, August 30, 1895.

E. K. Sprague detailed as recorder board for physical examination of officers revenue cutter service, August 22, 1895.

Asst. Surgeon J. B. Greene to proceed from Washington, D. C., to Wilmington, N. C., for temporary duty, August 22, 1895.

LETTERS RECEIVED.

Ashmead, A. S., New York, N. Y.; Antikamnia Chemical Co., St. Louis, Mo.; Atlantic Medical Weekly, Providence, R. I.; Atwood, H. M., Grand Rapids, Mich.

Bleyer, J. Mount, New York, N. Y.; Brunder, Geo., Milwaukee, Wis.; Boody, Geo., Kankakee, Ill.; Brenner, F. T., Quincy, Ill.

Coolidge, F. S., Chicago, Ill.; Christison, J. S., Chicago, Ill.; Chamberlain, Geo. L., Bessemer, Mich.; Currie, M. L., Ailey, Ga.; Chandler, H. S., New York, N. Y.; Cone, Andrew, New York, N. Y.; Cochran, Jerome, Montgomery, Ala.; Carpenter, J. W., Omena, Mich.

Davis, Wm. H., Colarado Springs, Colo.; Darr, H. H., Caldwell, Texas. Elliott, A. R., Chicago, Ill.; Evening Herald Co., Binghamton, N. Y.; Edwards, J. B., Milwaukee, Wis.

Gardiner, C. R., Hadley, N. Y.; Gardner, R. W., New York, N. Y.; Galloway, D. H., Chicago, Ill.

Hummel, A. L., (3) New York, N. Y.; Hyatt, B. F., Ottumwa, Iowa; Haldenstein, I., New York, N. Y.

Johnson, H. L. E., Washington, D. C.; Jenks, Ernst. P., North Brookfield, Mass.; Jordan, S. N. Columbus, Texas; Jelks, J. T., Hot Springs, Ark.

Kenyon News & Postal Subscription Co., Chicago, Ill.

Lamb, D. S., Washington, D. C.; Levings, A. H., Milwaukee, Wis.; Le Hardy, J. C., Savannah, Ga.

Mayo, E. L., De Kalb, Ill.; Moorhead, E. L., Chicago, Ill.; Messman, Hugo, Milwaukee, Wis.; Macey, The Fred Co., Grand Rapids, Mich.; McFarland, D. W., Waterbury, Conn.

Newman, H. P., Chicago, Ill.; Nelson, D. E., Chattanooga, Tenn.; Nolan, E. C., Mt. Pulaski, Ill.; Nutrico, The Food Co., Reading, Pa.

Prentiss, J. H., Ann Arbor, Mich.; Pepper, Wm., Newport, R. I.; Parke, Davis & Co., Detroit, Mich.

Ridlon, J., Chicago, Ill.

Sears, H. B., Beaver Dam, Wis.; Schimmel, M. S., Baltimore, Md.; Smith, A. A., Washington, D. C.; Scollard, W. E., Milwaukee, Wis.; Stearns, F., Detroit, Mich.; Subscription News Company, Chicago, Ill.; Scribner's, Chas. Sons, New York, N. Y.; Snickland, W. P., New York.

Timpany, R. H., (2) Toledo, Ohio.

Vowinkel, F. W., San Francisco, Cal.

Wyman, Hal. C., Detroit, Mich.; Whitford, Wm., Chicago Ill.; Würdeman, H. V., Milwaukee, Wis.; Westerveldt, J. D., Alice, Texas; Webber & Bigner, Mansfield, Ohio; Wilcox, Geo. A., Augusta, Ga.; Wakefield W. H., Charlotte, N. C.; Wilson, J. C., Philadelphia, Pa.